



Department
for Education

Evaluation of the Employer Ownership of Skills Pilot, Round 1: final report

Research report

September 2018

**John Higton, Sarah Leonardi and Peter Howe
– CFE Research**

**Andy Dickerson, Steven McIntosh and
Jennifer Roberts – University of Sheffield**

Contents

Executive summary	7
Key findings concerning the pilot process	8
Impact of the pilot	9
Employers	9
Learners	10
Chapter 1: Introduction and methodology	11
Employer Ownership of Skills	11
Aims and objectives of the pilot	12
Overall approach to the evaluation	13
Evaluation overview	13
Employer baseline (Sampling Point A)	14
Employer follow up (Sampling Point B)	15
Learner baseline (Sampling Point A)	16
Follow up survey with learners (Sampling Point B)	17
Depth interviews with employers	18
Chapter 2: Experience of EOP	19
EOP delivery	19
Activities delivered	21
Innovation	24
Employer investment	25
Employer views of EOP	26
Learners views of EOP training	28
Chapter 3: Training strategies and experience	30
Employer training	30
Training strategies and organisational effectiveness	30
Training delivered in previous financial year	33
Training costs	37
Employers' experience of training	37
Employers' attitudes towards skills and training	37

Satisfaction with training	38
Use of non-training activities	39
Chapter 4: Qualification levels and proficiency of workforce	41
Workforce qualifications, skills and proficiency	41
Workforce qualifications	41
Employees' skills and proficiency	42
Skills and equipment utilisation	43
Learners' current occupations	43
Skill levels and utilisation	45
Workforce age	46
Employer vacancies	46
Chapter 5: Impact of EOP	48
Summary of econometric methods used	48
Employers self-reported impact of EOP	49
Attitudes towards training	50
Productivity	52
Sector-wide impact	53
Employer Outcomes from econometric analysis	55
Learners self-reported impact of EOP	64
Learner Outcomes from Econometric Analysis	65
Conclusions	76
Employers' experience of the pilot	76
Impact of the pilot	77
On employers	77
On learners	78
Appendix 1: Employer characteristics SPB	80
Appendix 2: Learner characteristics SPB	82
Appendix 3: Econometric methods and result of Propensity Score Matching	84
Summary of methods	84
Output from PSM for each audience	87

List of figures

Figure 1: Features of three broad delivery model types of EOP Round 1 projects	19
Figure 2: Employers' views on how effective they found the project	26
Figure 3: Learners' views on how effective they found the training	29
Figure 4: Employers' views on employer ownership of training development at SPA and SPB	32
Figure 5: Employers' views on their organisational effectiveness	33
Figure 6: Training arranged for employees	34
Figure 7: Employers' attitudes towards skills and training	38
Figure 8: Employers' satisfaction with the quality and relevance of training	39
Figure 9: Types of non-training activities offered	40
Figure 10: Average workforce qualification levels (SPB)	42
Figure 11: Skills employees need to improve	43
Figure 12: Extent to which EOP contributed to learners' new role since SPA	44
Figure 13: Learners reported skills levels	45
Figure 14: Employers' view on the effectiveness of project on their organisation	49
Figure 15: Learners' views on the effectiveness of training towards their career	64

List of tables

Table 1: Summary of surveys completed by subject group and sample point	18
Table 2: Summary of activities undertaken by EOP Round 1 projects	21
Table 3: Proportion of learners trained who are existing or new employees	35
Table 4: Proportion of employees who have received training by type and level	36
Table 5: Number of observations - Employers	55
Table 6: Characteristics of Employers	56
Table 7: Raw Differences in Outcome Variables	59
Table 8: EOP Treatment Effects – Employers (Propensity Score Matching Results)	63
Table 9: Regression-adjusted Difference-in-Differences Treatment Effects	64
Table 10: Number of Observations – Learners	66
Table 11: Hours per Week of Apprenticeship Learning (per cent of apprentices)	68
Table 12: Percentage of Learning Hours that are Guided	68
Table 13: Characteristics of Learners	69
Table 14: Raw Differences in Wage Variables	71
Table 15: EOP Treatment Effects - Apprentices (Propensity Score Matching Results)	72
Table 16: Difference-in-Differences Coefficients - Apprentices	72
Table 17: EOP Treatment Effects – Non-QCF-learners (Propensity Score Matching Results)	75
Table 18: Employer characteristics by sector	80
Table 19: Employer characteristics - where UK headquarters is based	80
Table 20: Employer characteristics - company status at SPA	80
Table 21: Employer characteristics - company size at SPA	81
Table 22: Employer characteristics - company turnover at SPB	81
Table 23: Learner characteristics - gender	82

Table 24: Learner characteristics - ethnicity	82
Table 25: Learner characteristics - learning difficulty/disability or health problem	82
Table 26: Learner characteristics - age on starting EOP training	82
Table 27: Learner characteristics - EOP training undertaken	83

Executive summary

In 2014, The Department for Business, Innovation & Skills (BIS) commissioned CFE Research, the University of Sheffield and Qa Research to conduct a national evaluation of Round 1 of the Employer Ownership of Skills Pilot (EOP). Alongside all further and higher education policy, responsibility for the evaluation was transferred to the Department for Education in 2016.

The overall aim of the pilot was to test whether employers having direct access to public funds, co-invested with their own, increased their investment in skills or allowed them to demonstrate more effective ways to improve skills in the workforce than they achieved through mainstream skills funding.

The evaluation was delivered over five-years, starting in 2012 and ending in 2017. The evaluation covered 36 projects that comprised Round 1; each project was designed around a unique set of objectives. Econometric and self-reported assessments of impact at the programme-level have been calculated based on surveys with learners and employers involved in the pilots and those not involved as a comparison group, in addition to some supplementary secondary analysis of learners using the Labour Force Survey. This is supported by case studies and in-depth interviews with employers, providers and stakeholders to build qualitative depth. The evaluation focuses only on the 36 projects commissioned as Round 1 of the Employer Ownership of Skills Pilots; a separate evaluation has been commissioned for the Round 2 projects.

The econometric impact evaluation considered any additional training undertaken by firms involved in EOP, over and above that which would have occurred anyway. For learners, additionality in terms of the higher earnings as a result of EOP were tested.

A mixed method evaluation was designed whose main elements were:

- Baseline and follow up CATI (Computer Assisted Telephone Interview) surveys with employers who have provided access to learning through EOP and a counterfactual group;
- Baseline and follow up CATI and online surveys with learners accessing learning through EOP and those who have not accessed learning through EOP;
- Construction of a comparator group of learners from the Labour Force Survey (LFS);
- Depth interviews and observations with employers, stakeholders, providers and learners;
- Case study research with 10 projects where projects were tracked over the period of the evaluation.

Key findings concerning the pilot process

Projects varied greatly in the delivery models that were used, the types of activities that were undertaken and the challenges they were trying to overcome.

The key challenges EOP projects were seeking to address centred on skills gaps of current or future employees, a lack of appropriate training for the sector, addressing future skills shortages and tackling equality and diversity in their sector. Although EOP projects varied in design, they could be broadly categorised in three ways:

- Single employer-led models where projects were run and managed by a single employer;
- Multiple employer-led where a project was run and managed by a group of employers in partnership with one employer acting as the lead organisation; and
- Intermediary-led where this was managed by an intermediary organisation. Employers contributed to their training either through cash or through in-kind investment.

Key activities undertaken by participating employers were designing and developing new qualifications, engaging other organisations to support the delivery of training, expanding or updating current qualifications, developing work experience/pre-apprenticeship training and undertaking outreach activities. The level of involvement in these activities varied by project and by individual employers within multiple- and intermediary-led models.

Overall most employers had a positive experience on the pilot with three-quarters stating it was very good or good; the remainder classed their experience as average, poor or very poor. Around three-quarters of employers thought the pilot offered them value for money, that the training met the needs of the organisation and that the training providers delivering the project were responsive to their needs. Three-fifths of learners also reported they had learnt new skills as a result of the training they undertook

Evidence from depth interviews found that developing a collaborative approach to a skills gap with other employers in their sector was a positive aspect of involvement with EOP. Some projects successfully provided a forum for businesses to cooperate towards a shared goal.

Employers said that the management of EOP was their biggest challenge. Some employers found the administration and paperwork complicated and time-consuming whereas other expressed frustration with the perceived inflexibility of the scheme. Examples were also found of employers who saw no difference in EOP training compared to other training their learners undertook.

In a minority of cases employers had been able to bolt on additional training elements (to standard courses) through the EOP funding to improve training relevance to their business. Where tailored sector specific training was designed employers generally felt more in control through being able to specify course content enabling them to expand the knowledge a learner was receiving. These employers believed this approach had enabled them to develop a more suitable training programme that could accelerate the learning of their employees.

A minority of employers felt this process has served them well in gearing up for the development of their respective apprenticeship trailblazers. In other cases, however, EOP provided finance to purchase already available training for their staff highlighting little by way of innovation. Alongside this only half of all employers surveyed stated EOP training was better than training they did in the past for the same occupations.

Impact of the pilot

Employers

The varied nature of projects led to a variety of impacts in both scale and type. Some employers thought that EOP had made no difference to their organisation, although most recognised some form of impact for them, their employees or within the sector as a whole.

Many employers self-reported impacts on their own and others' attitudes towards training. Examples include considering whether to recruiting additional apprentices, increased training budgets, continuation of training started through EOP and using apprenticeships as an additional pipeline for leadership positions.

There is no evidence to suggest that EOP has changed attitudes towards training or that it led to subsequent increases in the number of staff trained. In part, this is due to the high levels of training already undertaken by EOP employers and the positive attitudes towards training they already held. As such, EOP cannot be said to have reached a large cohort of employers that had not previously trained their staff.

Employers referenced a number of difficulties which they faced regarding the sustainability of the training through EOP. These included a lack of funds or time to invest in training, or a lack of apprentice vacancies. There are however examples of employers continuing with EOP training or continuing with specific programme elements such as qualifications developed through the pilot.

A group of employers reported productivity gains as a result of EOP training. There was a belief amongst some employers that the development of new qualifications that are

targeted and more suited towards the needs of the sector would lead to a positive outcome for the sector as a whole.

The upskilling of staff with sector specific skills has in some cases led to more efficient workers and the development of new ideas or products.

The econometric impact analysis shows that, after one year, EOP employers do not report higher levels of training compared to a matched counterfactual group. The specific measures tested were: the proportion of employers delivering training; the average number of workers trained; and the average proportion of the workforce trained.

Learners

Around one-half of learners self-reported that the training they undertook had enabled them to advance in their career or in the company they currently work in. One-third of learners reported that they had changed role or moved to a new employer since the start of the pilot with around half of these stating this was a promotion. Over half of those who reported they had received a promotion or had moved into work (from unemployment) believed that undertaking their training through EOP had contributed to them gaining this role. Most learners also believed that the training they undertook had helped them to be better at their job.

The econometric impact analysis showed no impact on a learner's salary one year after completing the programme. The analysis compared EOP apprentices to apprentices in non-pilot firms, and also compared all non-QCF learners in EOP firms to a statistical comparison group of individuals observed in training in the Labour Force Survey. The treated learners are matched to comparison group learners with similar observed characteristics, and then the change in wages before and after learning are compared for the matched groups. The results of the analysis showed that although learners' salaries sometimes increased following the programme, the magnitude of the increase was no different to that experienced by other individuals on workplace training outside of EOP.

The data provide no evidence of impact for learners, as opposed to evidence of no impact. There was differential response from learners to the survey leading to a bias towards a couple of larger employers in the sample. In addition, propensity score matching between the treatment and control samples was less successful than hoped.

Chapter 1: Introduction and methodology

In 2014, The Department for Business, Innovation & Skills (BIS) commissioned CFE Research, the University of Sheffield and Qa Research to conduct a national evaluation of Round 1 of the Employer Ownership of Skills Pilot (EOP). Alongside all further and higher education policy, responsibility for the evaluation was transferred to the Department for Education in 2016.

Employer Ownership of Skills

In 2011, the UK Commission published its employer ownership vision¹, setting out the principle of ‘employer ownership’ and its potential to transform the skills system through employers developing solutions on behalf of themselves, their supply chains and others in their sector.

The fundamental rationale for employer ownership is the premise that employers and employees will be more willing to invest in skills development if they are given more freedom, and leverage over the use of government subsidy.² At the heart of this is the notion that “*greater ownership means greater responsibility*”. By stepping back and allowing employers the space to own the skills agenda, a more dynamic culture of responsibility and action is created. In return for greater freedom and control, employers are seen as being able to step up to the challenge of creating quality training opportunities, jobs and work experience, based fundamentally upon the demands of employers and industry.³

A number of key principles for employer ownership were set out by UKCES in their vision document in 2011. In brief, these are:

- **Employers should have the space to own the skills agenda:** The Government should create the space for employers to step up and take ownership of the skills agenda for the growth strategy of their industry or sector.
- **There should be a single market for skills:** There should be a single market for skills development where further education colleges respond to genuine demand rather than strategy imposed by government. In a single market, qualifications should be genuine vehicles for skills development, recognised and valued by employers and individuals.

¹ UKCES, *Employer Ownership of Skills, Securing a sustainable partnership for the long term*, (2011), p. 13.

² Unionlearn, *Employer Ownership of Skills Pilot: Briefing Paper*, (2012), p. 2. Accessed 04/12/2014: <http://www.tuc.org.uk/industrial-issues/skills-policy/employer-ownership-skills-pilot>

³ UKCES, *Employer Ownership of Skills, Securing a sustainable partnership for the long term*, (2011), p. 17.

- **Skills solutions should be designed by employer-led partnerships to reach more people and businesses:** Industry should be collaborating, working alongside employees, trade unions, colleges and training providers to create skills solutions that reach more employers and employees.
- **Public contributions for vocational training should move to employer incentives and investments:** Funding should follow ownership. Public contributions for skills development should flow through employers, transferring purchasing power to businesses and enabling true ownership of the system.
- **Transactions should be transparent:** Public contributions for skills and their use need to be transparent and simple, designed to facilitate employer and employee choice. Public contributions need to be visible in the market and empower employers and employees as customers to drive quality, innovation and value for money.

Aims and objectives of the pilot

The flagship expression of this vision was the announcement of the first round of the Employer Ownership Pilot (EOP Round 1) by BIS and the UK Commission in 2012, followed by Round 2 (EOP Round 2) in 2013. Government was not prescriptive on the precise content of EOP bids and employers were encouraged to develop scalable, wide-reaching, and even radical proposals.

The overall aim of the pilot is to test whether employers having direct access to public funds, co-invested with their own, will increase employer investment in skills or allow employers to demonstrate more effective ways to improve skills in the workforce than they can currently achieve through mainstream skills funding. The key objectives of the Round 1 Employer Ownership Pilot are:⁴

- To test a set of hypotheses about the benefits of employers playing a more active role in organising publicly funded training.
- To increase the impact of work readiness, workforce development and apprenticeships.
- To enable employers to better secure the training they need by having influence over quality and content and can shape training provision to meet their needs.
- To increase collaboration amongst employers to address cross-sector or supply chain skills challenges.

⁴ BIS, *Employer Ownership of Skills Prospectus*, (2012), p. 4. Accessed 13/02/2014. <http://dera.ioe.ac.uk/13706/>

- To increase employer leadership, commitment and investment in skills, including the involvement of employers who do not have a track record of investing in skills.

Overall approach to the evaluation

The overall aim of the evaluation is to provide evidence of the impact of the pilot and an assessment of whether employers having direct access to public funding has increased or improved their investment in skills, or enabled them to demonstrate more effective ways of improving skills in the workforce than they could achieve through mainstream funding.

The evaluation was delivered over a five-year period, starting in 2012 and ending in 2017. Quantitative assessments of impact have been calculated based on surveys with learners and employers involved in the pilots and those not involved as a comparison group. This is supported by case studies and in-depth interviews with employers, providers and stakeholders to build qualitative depth. The evaluation focuses only on the 36 projects commissioned as Round 1 of the Employer Ownership of Skills Pilots; a separate evaluation has been commissioned for the Round 2 projects.

The econometric impact evaluation of EOP aims to quantify the additional training undertaken by firms involved in EOP, over and above that which would have occurred anyway, and then evaluate that additional training in terms of the higher earnings of the learners involved in EOP, over their subsequent working lives. To enable us to undertake this analysis a counterfactual study was designed. This includes undertaking primary research with a sample of employers and learners (as outlined below) who are not taking part in EOP funded training and analysis of the LFS.

Evaluation overview

We have undertaken a mixed method evaluation including a number of interrelated phases encompassing both primary and secondary research. The main elements of the evaluation include:

- Baseline and follow up CATI (Computer Assisted Telephone Interview) survey with employers who have provided access to learning through EOP and a counterfactual group;
- Baseline and follow up CATI and online surveys with learners accessing learning through EOP and those who have not accessed learning through EOP;
- Constructing a comparator group of learners from the Labour Force Survey (LFS);
- Depth interviews and observations with employers, stakeholders, providers and learners;

- Case study research with 10 projects where projects were tracked over the period of the evaluation.

More detail on the methods used to inform this final report are outlined in the sections below.

Employer baseline (Sampling Point A)

EOP employers

A baseline CATI survey was designed for employers who have provided access to training to their employees through EOP. The census was undertaken at the earliest opportunity as employers appeared in the EOP data with new samples of employers being created every 3 months. The first employer interviews were conducted in September 2013 and the final interviews were undertaken in March 2015. In total 1,914 employers were identified with contact details. Some of the contact details provided were incorrect and others when contacted were unaware of EOP leaving a sample of 1,439 employers. In total 471 were interviewed representing a response rate of 33 per cent.

No firmographic details (size, sector, turnover, etc.) were provided for employers at Sample Point A. An EDS employer reference number that could potentially match to secondary data was provided, however the matching rate was poor⁵ and did not allow firmographic details to be matched to all employers. As a result, it was not possible to describe the sectoral structure of EOP employers and hence it was not possible to devise a weighting scheme for descriptive analysis.

Our final sample included 446 employers as a small number of employers were removed from the sample as they did not appear in the final release of EOP data for the relevant years⁶. Due to not being able to survey employers before they were involved in EOP, questions were designed to collect baseline information from employers about their previous tax year (either 2012/13 or 2013/14). In some cases, EOP training activities commenced the same tax year. However, it was agreed that asking employers to answer questions based on a tax year 2 years previous would lead to difficulties with recall. As a result, the baseline period for the employer survey was either *before* training started (45 per cent of responses) or *during* the year training started (54 per cent). A small proportion of employers (1 per cent) were asked these questions about a time period that was the year *after* the training was started by their employees.

⁵ Data quality for Blue Sheep data has improved significantly since the start of EOP.

⁶ R14 validated EOP data.

Counterfactual employers

A CATI survey was designed for counterfactual employers who comprised two groups:

- Control group 1: a survey of non-EOP employers, with a sampling frame obtained from the Employer Skills Survey (ESS) 2013.
- Control group 2: from a survey of individual employers with failed EOP bids, acting individually or as part of a consortium.

For control group 1 a random sample of employers (within specific sectors and sizes) were sourced from the UK Commission for Employment and Skills' (UKCES) Employer Skills Survey (ESS) from those who agreed to be recontacted. Two samples were sourced from the ESS to represent employers in particular sectors and sizes based on employers taking part in EOP. As EOP employer surveys were completed they were coded into Standard Industrial Classifications (SIC)⁷ in waves. Employer size was collected in the survey and a comparable counterfactual employer was then interviewed to ensure counterfactual employers were broadly comparable to the treatment group by sector and size (where possible). In total 30 responses were received from employers involved in unsuccessful bids and 578 from the ESS sample. The first employer surveys were conducted in September 2013 and the final interviews were undertaken in March 2015.

Employer follow up (Sampling Point B)

EOP employers

The timing of EOP interventions were variable. Some were short (as little as a day or a week) whereas others lasted for a number of years (e.g. apprenticeships). This means that the point at which learners complete differs by each treatment employer. As a consequence, the sample available for the longitudinal fieldwork (Sampling Point B, or SPB) includes treatment employers who were interviewed at different times, and also had learners receiving variable length interventions.

Therefore the longitudinal interviews were undertaken at a predetermined time *after* their learners completed. Where possible, impact was measured for employers 1 year after at least 70 per cent of EOP learning aims were completed, as recorded for their learners in the ILR. There were a small number of exceptions to this where the 70 percent threshold was not reached one year before the evaluation was due to be completed. For some

⁷ SIC 2007 was used.

employers due to staggering the fieldwork the interview date was more than 1 year post completion.

The employer sample was released in 6 batches based on the completion threshold between November 2015 and December 2016. In total 184 interviews were completed with EOP employers with a response rate of 4 per cent.

Counterfactual employers

The follow up interviews for the counterfactual employers were scheduled to enable representation across employer size, sector and the survey interval (length of time between SPA and SPB). The purpose of aligning the survey interval was to *minimise* any difference in reported impact. Whilst it is possible that impact is likely to be more apparent from an intervention that happened 2 years ago to one which occurred a year previously. As with the employer sample the data was released in 6 batches based on the completion threshold between November 2015 and December 2016. In total 253 interviews were completed with counterfactual employers with a response rate of 42 per cent.

Learner baseline (Sampling Point A)

EOP learners

A baseline CATI survey was designed for learners who had accessed learning through EOP. Learners were identified through the EOP data returns submitted by projects. Due to a lower than expected number of learners taking part in EOP and a low consent rate from learners to be contacted via telephone; three survey methods were developed to maximise the sample:

- The original CATI survey with those who provided telephone consent.
- An online survey sent directly to those who provided email consent.
- A second online survey for dissemination by projects directly to learners that had not consented to their details being shared (snowball method).

The baseline survey was undertaken as new learners appeared in the data with new samples being created every 3 months. The first learner surveys were conducted in September 2013 and the final interviews were undertaken in March 2015.

In total 28,803 unique learners were identified within the EOP data. Just over one-third (10,610) gave consent for research. Not all contact details were correct or a listed contact did not recall EOP training which further reduced the sample of 8,128. A mixed methodology method was adopted using telephone and online modes. As the online

method included free-find sampling⁸, the quoted overall response rate is based on the survey sample population of 8,128. Overall, we received responses from 2,388 learners, representing 29 per cent of all EOP learners for whom contact details were available. This comprised a 13 per cent response rate to the online survey and 28 per cent to the CATI method. In total we gained survey responses from 9 per cent of all learners accessing EOP provision, once duplicates or ineligible responses were removed.

Counterfactual learners

Two groups of counterfactual learners were undertaken for this evaluation.

- Control group 1: a surveyed sample of learners using the ILR as the sampling frame.
- Control group 2: general population of working age individuals, sourced from the LFS.

The comparison of the outcomes of EOP learners to control group learners allows us to evaluate the additional impact of training received through EOP compared to training received under conventional funding models.

An online learner counterfactual survey was developed for learners who were accessing training for control group 1. The learner counterfactual sample was drawn from learners identified in the dataset including only those with an Employer ID on equivalent workplace training programmes for which employment is a condition of training (Apprenticeships, ESF training) and had consented to contact via email. Learners were split into those undertaking an Apprenticeship (and may also have been undertaking other training) and those undertaking different funded learning (not an Apprenticeship) to ensure a spread of responses were received from both groups of people.

Random samples of learners were sent the survey across 6 waves. The response rate to this sample when removing bounced email contacts was 4 per cent. The first learner surveys were conducted in May 2014 and the final surveys were undertaken in March 2015. Once learners were removed from the dataset that had also participated in EOP training we had 2,648 responses.

Follow up survey with learners (Sampling Point B)

The follow-up method for sampling learners is the same as for employers with the aim to interview them one year after completing their training as predicted in the EOP or ILR

⁸ A snowball method is a non-probability sampling technique using existing study participants to recruit other participants from among their acquaintances. For this study, the evaluation team engaged with key contacts from projects to distribute the survey links. See Appendix 1 for further information.

data. The SPB treatment sample includes all EOP learners, however only counterfactual apprentices were interviewed at SPB. Data from the Labour Force Survey was used to estimate impact for the remaining group of counterfactual learners.

The learner sample was released in 6 batches based on the completion threshold between November 2015 and December 2016. Based on a learners preferences the surveys were undertaking via CATI or using an online method. In total 727 interviews were completed with EOP learners and 614 with counterfactual learners (apprentices only).

Table 1: Summary of surveys completed by subject group and sample point

Group	Sampling Point A	Sampling point B
Employers		
Treatment Group	471	184
Comparison Group	608	253
Learners		
Treatment Group	2,388	727
Comparison Group	2,648	614

Depth interviews with employers

31 depth interviews were undertaken with employers involved in EOP following their participation in the SPB CATI survey. Of these 14 were undertaken with case study employers⁹ and 17 with non-case study employers to explore their experience of the pilot and the impact they thought participation had on them. Interviews were undertaken by telephone and lasted approximately 30-45 minutes. Interviews were undertaken with employers who had led their pilot and those who had access training through the pilot.

⁹ Case study employers were those belonging to one of ten projects who were tracked longitudinally throughout the research.

Chapter 2: Experience of EOP

This chapter summarises the delivery models used by projects and the activities undertaken through EOP. It then summarises employers' views of EOP through examining what employers thought worked well and any challenges faced. This chapter concludes by summarising learners' views of the EOP training they received.

EOP delivery

Through EOP Round 1, 36 projects were commissioned, each covering a unique set of objectives. Examining the Round 1 projects as a group, the challenges they are seeking to address generally fall into the following areas (Source: Grant Offer Letters):

- Skills gaps in employees and new recruits
- Lack of capacity within the sector to provide training
- Lack of training/qualifications to support entry into the sector
- Future skills shortages due to an ageing workforce
- Addressing equality and diversity issues in the sector

Across EOP projects there was a significant variation in terms of rationale, delivery methods and pilot activities that were undertaken. However, there were similarities among pilot projects in how they were set-up and managed. In attempting to understand how EOP funds were directed, three broad delivery models have been identified. These models reflect their status at the time of completion of learner registrations in summer 2014 rather than at the beginning of the pilot. The categories reflect the way a project is managed rather than the activities undertaken for training (Figure 1).

Figure 1: Features of three broad delivery model types of EOP Round 1 projects

Single Employer-led	Multiple Employer-led	Intermediary-led
<p>These projects were run and managed by a single employer</p> <p>A total of 9 projects fall into this category</p> <p>Most offered apprenticeships and all undertook some form of non-QCF activity</p> <p>Some projects also offered outreach activity or pre-employment provision</p>	<p>These projects were run and managed by a group of employers in partnership with one employer acting as the lead organisation. This organisation was usually accountable for the project.</p> <p>A total of 7 projects fall into this category</p> <p>Half included apprenticeship provision and the other half outreach work. One project undertook pre-employment or work experience activities</p>	<p>The pilot was managed by an intermediary organisation with employers "owning" the process</p> <p>A total of 20 projects fall into this category</p> <p>Intermediaries included employers, providers, industry bodies, local authorities and others</p> <p>Most offered apprenticeships and QCF accredited training</p>

Single employer-led projects

Nine pilots were designed for the purpose of benefiting the lead organisation primarily (categorised as **Single employer-led**) to address their specific skill or business issue. These projects were typically run by an existing member of staff (e.g. Head of HR or Training Manager) with another member of staff managing or supporting the back office element of the project (e.g. supporting learner registrations, ILR data requirements).

Multiple employer-led projects

A further seven pilots were formed through a partnership of employers from the same sector, or were managed by an employer to benefit a sector or the employers' direct supply chains (**Multiple employer-led**). Employers engaged via this model collaborated to address a shared business issue with one organisation having acted as the accountable organisation. This model used EOP funding to galvanise the input and resources of competing employers towards a shared common goal (typically succession planning and the need to up-skill or diversify their employee base). For these employers in particular there was a mixture of first time collaboration and funding existing collaborations.

Where the approach was geared towards engaging with the supply chain there was some variety to different approaches and circumstances across the projects. Where larger employers (e.g. national or global organisations) were the lead employers, there tended to be an opening up of their training packages and skills to their supply chain for them to benefit. Where projects were smaller, lead employers often took a collaborative approach to deciding the focus of the project by canvassing the needs of the sector or involving partners in the design of provision.

Intermediary-led projects

Twenty of the pilots have been categorised as being managed by an intermediary organisation (**Intermediary-led**). The intermediaries that supported these pilots were varied. Some were led by an employer acting as an intermediary and included employer-led Sector Skills Councils (SSCs) and National Skills Academies (NSAs), but also trade federations supporting and lobbying on behalf of a particular sector, a local authority and a chamber of commerce. These organisations were often those that had heard about EOP in the first instance and had used their employer networks to canvas opinions about the opportunity and generate sufficient interest to submit an application. An employer was required to act as the lead employer for the project, with the intermediary managing the project to remove the administrative burden but also bringing a degree of neutrality to ensure that no single employer was being seen to benefit above others. In designing the training provision there were several examples of intermediaries that had consulted with the sector (e.g. through focus groups, or through consultations) to understand specific training or business issues to arrive at a suitable solution.

Activities delivered

To address the varied aims and objectives of each project the pilot allowed employers flexibility to devise their own tailored solutions. Projects frequently undertook different sector-specific solutions, reflecting the different challenges and issues facing each organisation. For example, attempts to address internal skills shortages were more likely to involve developing training with formal qualifications, whereas wider deficiencies in the external labour market often involved the development of unaccredited qualifications. For some projects, responding to known skills challenges in the industry meant addressing more fundamental longstanding issues over the number and type of applicants for vacancies in a sector, for example through the development of pre-employment training or outreach activities. The proposed approaches for EOP Round 1 projects were therefore diverse, often involving multiple activities and interventions of differing extents. In general, these included (Source: Grant Offer Letters):

- Engaging other employers and/or stakeholders to support the delivery of training and qualifications
- Expanding or up-scaling existing training courses or qualifications
- Designing and developing new qualifications or training
- Developing work experience/pre-employment provision
- Outreach activities to attract new entrants into the sector

In line with distinctions made by the Skills Funding Agency, EOP activities can be divided across four principal overlapping strands of skills investment.

Table 2: Summary of activities undertaken by EOP Round 1 projects

Activity type	Number of projects
Apprenticeships (accredited)	23
Employer-Defined Programmes	4
QCF accredited provision	17
Non-QCF provision ¹⁰	29

Source: Skills Funding Agency data and information from interviews

All but seven projects include some element of non-QCF training activity, which is distinct from mainstream FE delivery, in that it cannot be funded through mainstream FE routes.

¹⁰ Non QCF refers to training that is not 'formalised' or accredited (e.g. in-house certificate or a competence based certification by the employer).

Non-QCF activities also included non-training activity, the principal types of which are summarised below:

- *Outreach activity* – This typically addressed two strategic project objectives: to recruit learners on to their respective programmes or to enhance people’s knowledge of the training and career opportunities available across the sector.
- *Pre-employment* – Pre-employment was often delivered in partnership with an intermediary, for example a training provider or Jobcentre Plus to aid in recruitment. The nature of the pre-employment activity was wide-ranging from a series of one day employability workshops focusing on employability training to intensive six month programmes incorporating practical training.
- *Work experience* – These activities involve collaboration with intermediaries such as schools, colleges, Jobcentre Plus offices, sector-based work academies. Work experience tended to be designed to complement other planned EOP activities, such as full apprenticeships.

Employers whose learners took part in EOP training were asked during depth interviews to describe whether the training their learners undertook was different to what was already available or they had undertaken before.

A minority of employers described that the training they accessed through EOP was ‘*off the shelf-training*’ e.g. sector specific recognised professional qualifications. As a result, these employers described no real difference in the training they were putting their staff through under EOP than they had previously. In a minority of cases, employers had though been able to bolt on additional training elements through the EOP funding to improve the relevance of the course to their business.

Where tailored sector specific training was designed employers generally felt more in control through being able to specify course content.

If we didn’t feel it was relevant to the course then we’d ask them to be removed or why it wasn’t there. It was to make sure that we were getting the best for the staff that went in there, so that we could gain the better skills.

Projects that were undertaking apprenticeships cited also that an emphasis was placed upon exposure to a wider range of training under EOP, as opposed to a focus on a particular technical aspect, to create a higher calibre apprentice.

Previously, when you entered the industry, you entered it in a silo. Therefore, when you went on your journey and transferred to a technician, senior technician, you were only generally capable of one skill or discipline. What the pilot allowed us to do is to draw up a framework which combined all three disciplines, so now when

apprentices join the industry, they train in all three disciplines, so they're multi-skilled.

Employers reported that they believed the apprenticeships that were developed were more challenging for learners due to increased content. They also reported that there was more rigour placed on the application process to recruit 'better' candidates.

So previously we've done CV, application, interview and that's that. We did the same as a pre-selection and then we had a half day of selection which included some practical tasks and also a bit more of an understanding for the candidate of what it was actually that we do. Not only did they better understand what it was that they were letting themselves in for, we also got a better understanding of whether they were cut out for the sort of work we do.

A minority of employers adopted a pre-apprenticeship model into their delivery programme as a result of the programme. This was a mutually beneficial approach for both employers to gauge the suitability of a candidate for the business and for the learner to provide exposure to the sector, the nature of the training and working environment over a short timeframe. This provided employers with greater freedom to develop an entry level programme and increased the likelihood of retention rates when the person was taken on, which some employers cited were previously an issue for their business.

A minority of businesses (in the construction and manufacturing sector) had used EOP to target non-graduates as an additional pipeline (compared to graduates) as future managers and leaders across their businesses. One employer developed a technician programme targeting individuals with GCSEs or A levels. This was designed so that by the time they would have graduated they would have 3-4 years practical work experience in their industry and could then develop the experience of leading people.

One employer highlighted how their training under EOP was accompanied by an external mentor who acted as broker between the apprentice and employer to resolve any issues between both parties. In addition some projects, in particular those that had a national reach, had an emphasis on encouraging networking among learners to learn from one other during their training. A minority of employers cited that although they were competitors there was a greater emphasis on supporting each other through their course.

It just meant that the isolation that being in a small business with no real connections to other people, shops, and all the rest of it was moved on a huge amount

Innovation

Innovation in the design and delivery of workplace training is an important aspect of the employer ownership concept. As stated in Employer Ownership of Skills (UKCES, 2011¹¹):

The central aim of the employer ownership pilot is to give businesses the space to step up and develop new and innovative proposals for tackling the current and future skills needs of their sector, supply chain or local area along the lines outlined in this paper.

Innovations described by employers can be best summarised as being either contextual or adaptive innovations to existing training already available. The Round 1 initial findings report¹² presented in more detail examples of where projects had undertaken these types of innovations to develop their training for example employers working with their supply chain enable them to access training or expanding employer-led sector specific training.

Consultations with employers more recently suggest that adaptations and improvements to apprenticeships for example had been a success for their own business or the wider sector. Being able to develop a more suitable training programme that could accelerate the learning of their employees was regarded as being innovative and in one example saved nearly one-third of a learner's time to undertake the apprenticeship:

Apprenticeships used to stop for two weeks during the summer. They used to stop during Easter. They used to stop at Christmas. The start and finish time, for example, wasn't in line with industry. So, we made our apprentice programme start at 8 o'clock and finish at 4:30. Also, there were no holidays apart from a two-week holiday break in the summer.

Engaging experienced members of staff with the technical knowledge, alongside other related businesses to influence the design of new projects was also regarded as being innovative. Some of the employers felt this process has served them well in gearing up for the development of their respective apprenticeship trailblazers. In other cases, however, EOP provided the means (principally access to finance) to purchase already available training for their staff highlighting no innovation.

¹¹ UKCES, *Employer Ownership of Skills, Securing a sustainable partnership for the long term*, p.8.

¹² <https://www.gov.uk/government/publications/employer-ownership-of-skills-pilot-round-1-first-report>

Employer investment

Of the employers consulted through depth interviews, there was nearly an even split in the nature of their contribution to EOP training. Just over half had contributed both a cash and in-kind investment, with just under half stating they provided in-kind alone. No employers that were consulted implied that their contribution to EOP was just cash only.

Overall, cash investments from employers were typically contributions towards the cost of training provision for their staff with proportions ranging from typically one-third to half the amount. A minority also highlighted paying for additional 'bolt-on' elements of training and support:

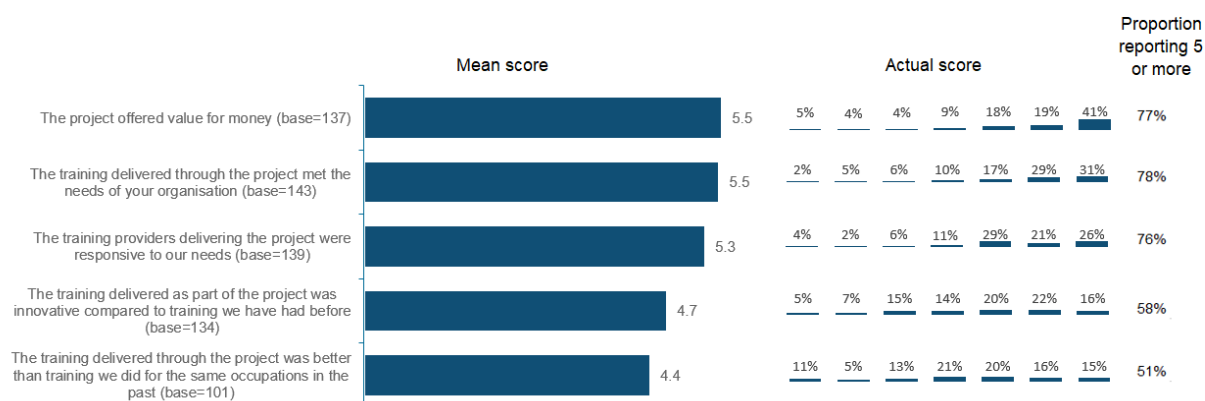
There was a lot of things like extra mentoring work, additional courses, additional support, webinars and things like that, that we were able to register the individuals on to get. It was then, sort of enhancement to the training process

In-kind contributions in the main covered time off work for employees to undertake training or learning. One employer highlighted that given the enhancement of the training on offer, they had increased time off for training – seeing the greater value to the business to do so. Other forms of in-kind contributions included (where applicable) time to set-up and administer their respective EOP projects. Some projects also seconded other members of staff to provide financial or administrative support. When probed, most employers suggested that their in-kind contribution exceeded what they had envisaged spending on the programme and while it had improved the programme (e.g. developing a better product or achieving their learner targets) it did impact on their day-to-day role.

Employer views of EOP

During the SPB survey EOP employers (who were aware of the pilot) were asked to rate on a scale of 1-7 to what extent they agreed with statements about EOP (where 1=strongly disagree and 7=strongly agree).

Figure 2: Employers' views on how effective they found the project



Mean score to what extent do you agree that taking part in project has had an impact on your organisation, where 1=strongly disagree and 7= strongly agree (employer survey).

Three statements received a similar positive average score: the project offered value for money (5.5), the training delivered met the needs of the organisation (5.5) and the training providers delivering the project were responsive to our needs (5.3). The statements also received 5 or more out of 7 by three-quarters of employers (see Figure 2).

Only half of the employers (for whom it was applicable) reported a score of 5 or more out of 7 for the statement that EOP training was better than training they did in the past for the same occupations. As per the econometric analysis (Chapter 3: Impact of EOP), this point supports the wider finding of limited additionality arising from the pilot.

A total of 81 per cent of treatment surveyed employers remembered taking part in EOP at SPB. Nearly all who did not recognise EOP (97 per cent; 35 employers) were involved in intermediary-led¹³ projects.

The employer cohort that recalled taking part in EOP were asked to rate their overall experience of the pilot. Nearly three-quarters (73 per cent) stated that their experience was 'very good' (35 per cent) or 'good' (38 per cent). Just under one-fifth (18 per cent)

¹³ Please refer to Figure 1 for a description of this model.

stated their experience was 'average', 6 per cent stated 'poor' and just 2 per cent stated 'very poor'.

During the survey, employers were then asked to state what they thought worked well during the pilot. The most frequently reported aspect of what they thought worked well was receiving good quality training which taught learners new skills (44 out of 143).

We got a member staff trained to the standard we wanted them trained when we couldn't access funding in a different way.

We were very happy with the apprentice and the training she got was very good. It was great value to her and great value to us.

Being able to access funding to pay for training or subsidise training was reported by 17 employers. Employers also liked the flexibility of EOP allowing them to collaborate on training with other employers in their sector (16).

The course was good because they went to different companies and compared them all. See how people do things differently.

Interviews with several employers also echoed this sentiment, that developing a collaborative approach to a skills gap with employers from the sector was a positive aspect of their involvement in EOP. It is interesting to note that issues of rivalry or competition were not raised by employers. Based on these interviews, EOP has seemed to have successfully provided a forum for businesses to cooperate towards a shared goal within some projects. Through the consultations the requirement for one employer to have overall contractual (including financial) responsibility for their pilot created additional pressure for some lead employers especially where engagement or learner achievements were below anticipated levels. Where intermediary models were used the collaboration with a trade body/sector intermediary organisation to handle the administrative tasks associated with the pilot helped some employers to channel their efforts to focus on the design of their training, or outreach activity.

The fact that the individual companies didn't have to do all the admin meant that it was worth doing. Actually, we've not participated in any of the subsequent programs because I simply don't have the time or inclination to do all the administration.

A wide range of other aspects of EOP was reported as good including: the support they received on the pilot, the flexibility of the programme, good communication and being given a voice to shape the training they were given.

We were able to influence the content of training in a way that we were not able to do before. The programme made the Further Education institutions listen to us

and what we as the business wanted, when previously they would not even consider what we wanted.

Very few impacts were mentioned by employers during the depth interviews in respect of the impact EOP had had on their collaborations with training providers. Amongst those that did employers suggested there was a positive shift in the relationship in favour of employers who felt EOP had been able to create a more employer responsive attitude with employers having great control of the funding.

Colleges have listened to us and they have improved a little bit. That wouldn't have happened without the pilot program because the colleges that we approached were visibly shocked when they realised that they were going to have to do something different and that that's where the money was going to come from. That did cause a cultural change within the college and although that's slipped back a bit, there is still a bit of change there.

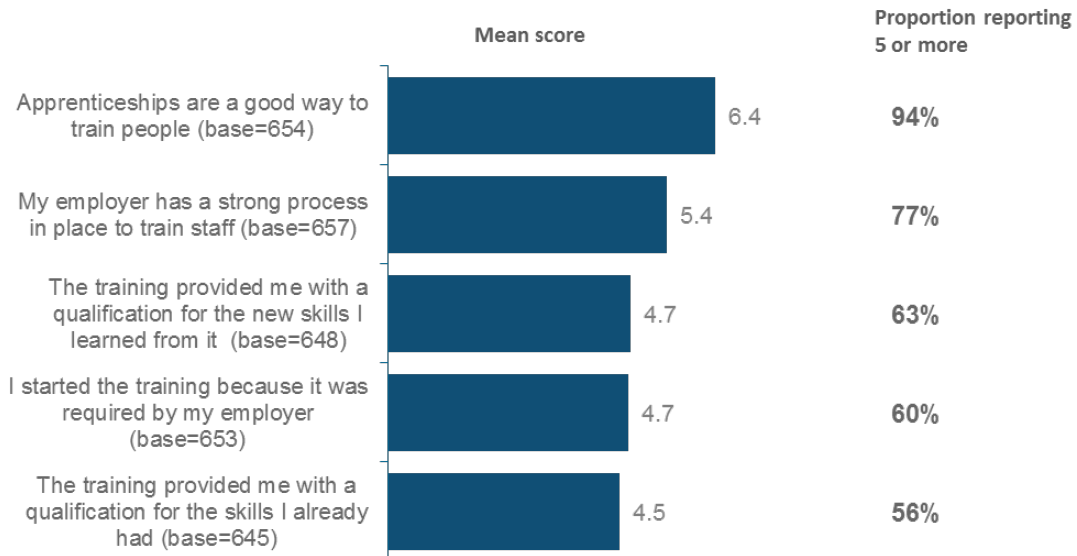
Employers were asked during the survey what their greatest challenge had been to date with the pilot. The findings remain unchanged from those reported in the Round 1 initial findings report¹⁴ with the most frequently reported area was surrounding the management of the pilot (31 out of 95 who reported something 95). This ranged from employers finding the administration and paperwork complicated and time-consuming to frustration with the inflexibility of the scheme. Finding time to take part in the pilot was also reported as a difficulty (19) alongside challenges of finding a training provider to deliver the training (8) and for some the quality of the provision provided (8).

Learners views of EOP training

EOP Learners were asked to rate on a scale of 1-7 (where 1=strongly disagree and 7=strongly agree) to what extent they agreed with a range of statements about the training they undertook through EOP and their views of their employer and apprenticeships. There was an overall consensus that apprenticeships were a good way to training people with an average score of 6.4 out of 7. On average learners gave a score of 5.4 out of 7 to the view that their employer has a strong process in place to train staff, with over three quarters (77 per cent) stating a score of 5 or more out of 7. Three-fifths of learners also stated that they had learnt new skills (63 per cent) with a similar proportion stating they undertook the training because it was required by their employer (60 per cent).

¹⁴ <https://www.gov.uk/government/publications/employer-ownership-of-skills-pilot-round-1-first-report>

Figure 3: Learners' views on how effective they found the training



Mean score of how far do you agree with the following statements about the training you were doing around the time when you were last interviewed, where 1 is strongly disagree and 7 is strongly agree (learner survey).

Chapter 3: Training strategies and experience

This chapter summarises employers' experience of, and satisfaction with, training over the last year. It reports their views on training and workforce effectiveness and also explores the use of non-training activities including work experience, pre-employment and outreach.

The descriptive analysis covered within this chapter primarily covers the views of treatment employers answering at Sample Point B (SPB; around 12 months after the completion of training delivered by the pilot). Where analysis of a different cohort is presented, that cohort is identified in the text.

Descriptive analysis of change between waves has been conducted where there an employer completed a survey at both sampling points. For the purpose of reporting, these 184 employers are labelled "longitudinal employers". Reported changes in views for this cohort of longitudinal employers. However, they cannot be generalised to all EOP employers as the lack of descriptive data for treatment employers at Sample Point B means it is not possible to describe the EOP employer population accurately. Consequently, it was not possible to derive a weighting scheme to account for differential non-response within the treatment population.

Employer training

Training strategies and organisational effectiveness

Of all SPB treatment employers, over two-thirds (72 per cent) of employers reported having a training and staff development strategy. Of these, 17 per cent of those with a training and staff development strategy reported said this had been implemented after starting EOP. Just under one-fifth (18 per cent) of employers reported that they were currently part of a training consortium.

Four in five (81 per cent) of treatment employers recalled taking part in EOP at Sample Point B. Of those treatment employers who could recall taking part in EOP 8 (out of the 23) reported not having this in place before taking part in EOP.

Longitudinal employers were asked to what extent they agreed with a number of statements about employer ownership in the training and development of their workforce (Figure 6). Although most longitudinal employers still agreed with the majority of listed statements, they became less positive about designing their own training, that they have sufficient influence over training and that they want to collaborate to meet skills needs. The following changes were found:

- A decrease of 14 percentage points for: *you would like to design your own training solutions* from 71 per cent strongly agreeing or agreeing to 57 per cent
- A decrease of 13 percentage points for: *you have sufficient influence over the content of external training* from 51 per cent strongly agreeing or agreeing to 38 per cent
- A decrease of 13 percentage points for: *you would like to collaborate with training providers to meet skills needs* from 87 per cent strongly agreeing or agreeing to 74 per cent
- A decrease of 10 percentage points for: *you would like your business to play a greater role in setting the skills agenda for you industry* from 73 per cent strongly agreeing or agreeing to 63 per cent
- A decrease of 10 percentage points: *you would like to collaborate with other employers in your sector or supply chain to meet skills needs* from 77 per cent strongly agreeing or agreeing to 66 per cent

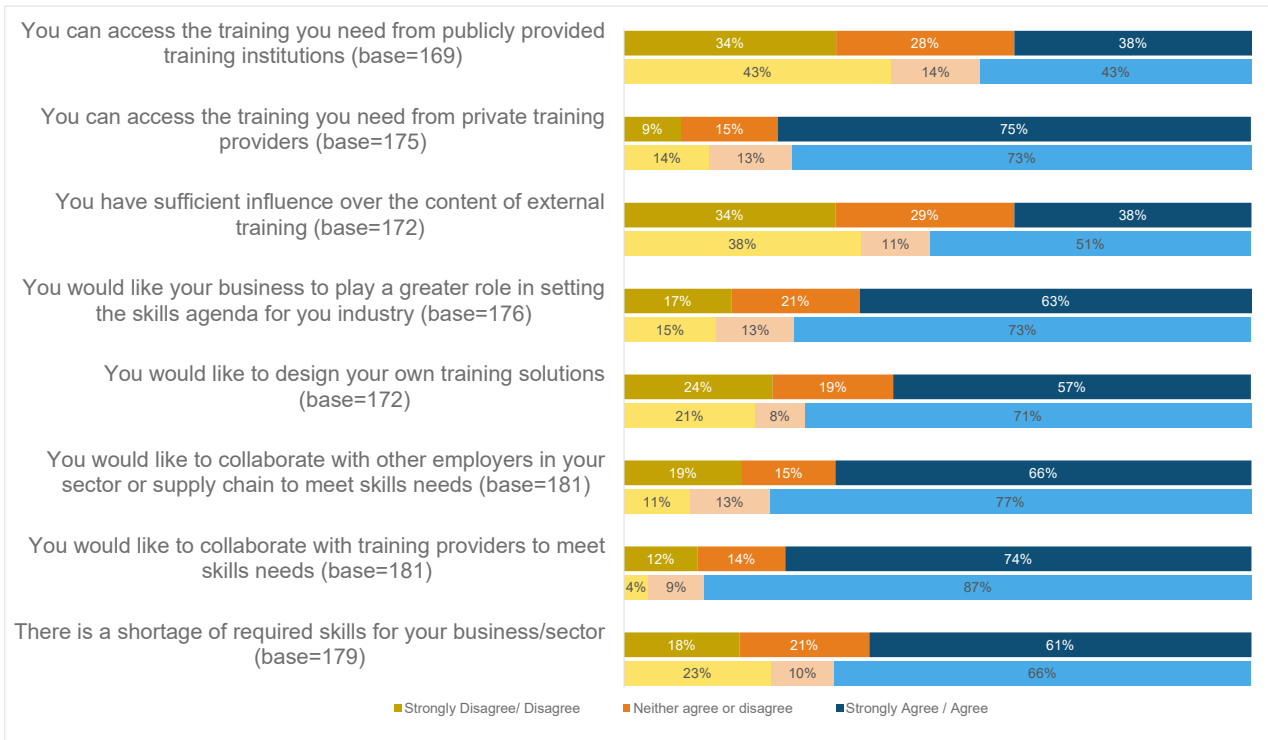
In general, views did not become negative, rather longitudinal employers were more likely to state they neither agreed nor disagreed with statements. What caused this change amongst longitudinal employers is unclear. However, findings from qualitative fieldwork does suggest employers addressed challenges when developing training solutions. These interviews showed that designing training solutions was not always easy and took time (a major concern for SMEs); this was not always fully anticipated at the beginning of their involvement, therefore employers maybe reflecting some realities of designing a bespoke solution.

Views of training

When comparing responses, longitudinal employers were less likely to agree (66 per cent to 61 per cent) that *there is a shortage of required skills for their business/sector*, and, as above, this change was accompanied with a switch to a neutral stance (10 per cent to 21 per cent neither agreeing or disagreeing). Similarly, longitudinal employers became less likely to agree that *they have sufficient influence in training content design* (51 per cent to 3 per cent) and become more neutral responses (11 per cent up to 29 per cent neither agreeing or disagreeing).

Figure 4: Employers' views on employer ownership of training development at SPA and SPB

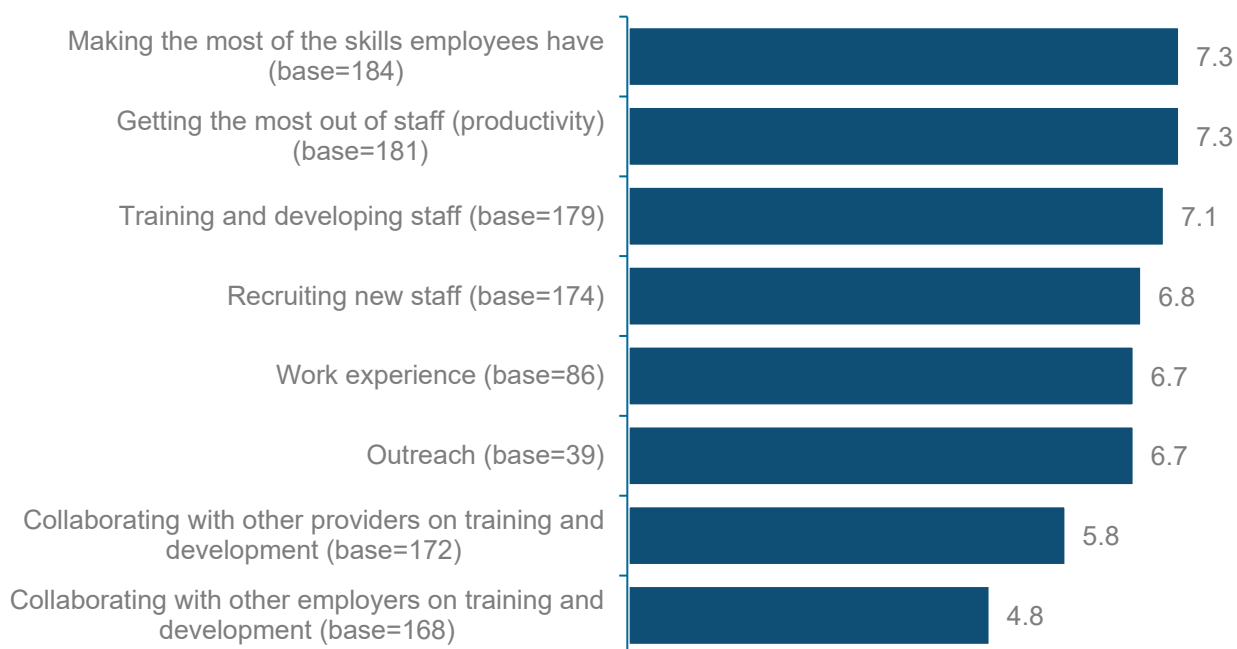
On a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree, to what extent do you agree or disagree with the following statements about the training and development needs of your workforce? (SPA and SPB employer surveys).



Organisational effectiveness

Employers were asked to rate a number of statements, on a scale of 1-10, where 1 is very poor and 10 is excellent, about the effectiveness of their organisation in different areas. Overall, employers were in modest agreement with the majority of statements with most mean scores falling between 6 and 7 out of 10. The areas which received lower scores were collaborating with other training providers on training and development with a mean score of 5.8 and collaborating with other employers on training and development at 4.8 Figure 5).

Figure 5: Employers' views on their organisational effectiveness



Mean score of how effective is your organisation in the following areas, where 1 is very poor and 10 is excellent? Base varies due to routing (employer survey).

Across employers who responded to the statements at both SPA and SPB changes in scores between the two sampling points were found for the statements below. However, the changes experienced are relatively small overall (a range of -0.6 to +0.2) suggesting treatment employers' views have not altered significantly:

- Work experience (decrease from 7.3 to 6.7)
- Making the most of the skills employees have (decrease from 7.7 to 7.3)
- Training and developing staff (decrease from 7.5 to 7.1)

Training delivered in previous financial year

The majority of longitudinal employers¹⁵ (88 per cent) arranged on the job or off the job training for their employees in the previous tax year at SPB; 96 per cent of these employers said the same at SPA meaning there was an eight percentage point drop-off in training activity after EOP. This may be explained by some of the qualitative findings in which EOP provided the training required and nothing further was deemed necessary.

¹⁵ Base: n=184

As a general comparison, around two-thirds (65 per cent to 66 per cent) of employers said they trained staff over the last three UKCES Employer Skills Surveys (ESS)¹⁶.

Three quarters (74 per cent) of longitudinal employers reported arranging off the job training at SPB and a similar proportion (77 per cent) arranged on the job training for their staff. As with the proportions training overall, these figures represent a drop off amongst the longitudinal employer cohort compared to SPA. At baseline, off the job training was funded by 84 per cent of longitudinal employers and on the job training by 83 per cent.

These employers provided a range of training. The majority provided health and safety/first aid training (93 per cent) and job specific training (91 per cent). Three-quarters (76 per cent) reported induction training, 64 per cent supervisory training and 61 per cent management training (Figure 6). Where comparison exists, the proportion of employers offering different types of training in the ESS was less. For example, 85 per cent of employers that trained in the ESS offered job specific training and 75 per cent offered health and safety / first aid training. Far fewer ESS employers offered supervisory and management training (36 per cent and 37 per cent respectively).

Figure 6: Training arranged for employees



The type of training arranged for employees (employer survey). Base=160.

Overall, EOP employers at SPB were training a wide range of employees. On average across all employers 20 per cent of learners trained were new to the organisation, 13 per

¹⁶ UK Commission for Employment and Skills (2016) Employer Skills Survey 2015: UK results, UKCES, London
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/525444/UKCESS_2015_Report_for_web_May_.pdf P.11

cent were existing employees in a new role and the majority (62 per cent) were existing employees who had held their role for more than 12 months and a minority (5 per cent) were apprentices.

On the latter point, more than seven in ten employers (71 per cent) did not employ apprentices aged 16 to 18 and hence did no training with this group. Just over one-third (31 per cent) of employers had not provided training for those new to the organisation and 49 per cent reported providing no training for existing employees who held a new role for 12 months. Conversely, nearly nine in ten employers (88 per cent) trained existing employees who had been in their current role for 12 months or more (Table 3). At SPB, EOP employers were more likely to train employees with over a year's experience in a role which may mean these employers look to the recruitment process to address some of their skills shortages.

Table 3: Proportion of learners trained who are existing or new employees

	<i>Overall average composition of workforce trained were...</i>	Proportion of employers <u>not training employees</u> that are...
New to the organisation (i.e. trained within a year of entering the organisation)	20%	31%
Existing employees but had held a new role for under 12 months	13%	49%
Existing employees had held their role for over 12 months	62%	12%
Apprentices aged 16-18 years of age	5%	71%

The proportion of trainees who were provided with training by employers (employer survey). Base=119¹⁷.

Employers were also asked how many employees they provided training to across different types and levels of qualifications. Table 4 shows the most frequently reported training was short courses that were less than a day; 57 per cent of employers stating that at least one employee had undertaken this type of training. Short courses lasting 1-2 days and Intermediate apprenticeships were the next most popular with two-fifths (39 per cent) of employers reporting they had provided one or more employee with this training.

¹⁷ Base is lower as the proportion of employers stating "don't know" relatively high (23 per cent).

Table 4: Proportion of employees who have received training by type and level

	Proportion of employers who have provided training to...				
	Training not provided	1 employee	2 employees	3 employees	4 employees or more
No qualification aim/non-certified training short course (less than 1 day)	43%	2%	3%	3%	49%
No qualification aim/non-certified training short course (1-2 days)	61%	2%	5%	5%	27%
Intermediate apprenticeship	61%	12%	7%	5%	14%
Advanced apprenticeship	70%	5%	8%	1%	16%
Level 4 qualification or higher	74%	8%	3%	2%	13%
No qualification aim/non-certified training (3 days or longer)	76%	3%	4%	2%	15%
Level 3 qualification	77%	6%	4%	1%	12%
Level 2 qualification	83%	2%	3%	2%	10%
Higher apprenticeship	88%	4%	3%	1%	5%
Other training	88%	3%	1%	1%	7%
Level 1 qualification	93%	5%	1%	0%	2%
Non-accredited apprenticeship	96%	1%	1%	0%	2%

Proportion of employers who state they have delivered training (employer survey). Base=178

The few treatment employers did not provide any staff with training in the last financial year most often said ‘there was no need for training’; 13 out of 23 employers not offering training cited this reason.

Training costs

For those employers who arranged training for their employees in the previous year, a small proportion (4 per cent) reported spending no money on this training. Almost half (48 per cent) reported spending less than £10,000, 12 per cent between £10,000 and £19,999, 15 per cent between £20,000 and £99,999 and 11 per cent £100,000 or more. A small proportion (11 per cent) also stated don't know.

Overall, training spend appears to have increased amongst longitudinal employers. At SPA, more of these employers said they spent no money (7 per cent) or less than £10,000 (54%). Subsequently, these employers were less likely to have spent £10,000 to £19,999 (8 per cent) or £20,000 to £99,999 (9 per cent).

SPB employers were asked about the amount of public funding for training they accessed in the prior tax year¹⁸. Other recent studies illustrate that employers do not always understand the mechanisms of public-funding for training¹⁹, so the best interpretation of this question is the amount the employer spends from their training budget on public training. Nearly half (45 per cent) of employers said they did not access any publically funded training in that year. A further 13 per cent were not sure. Just over one-quarter (29 per cent) of employers reported accessing less than £10,000 in public funding, 5 per cent reported between £10,000 and £19,000, 3 per cent between £20,000 and £99,000 and 5 per cent accessed £100,000 or more of public funding for training.

Employers' experience of training

Employers' attitudes towards skills and training

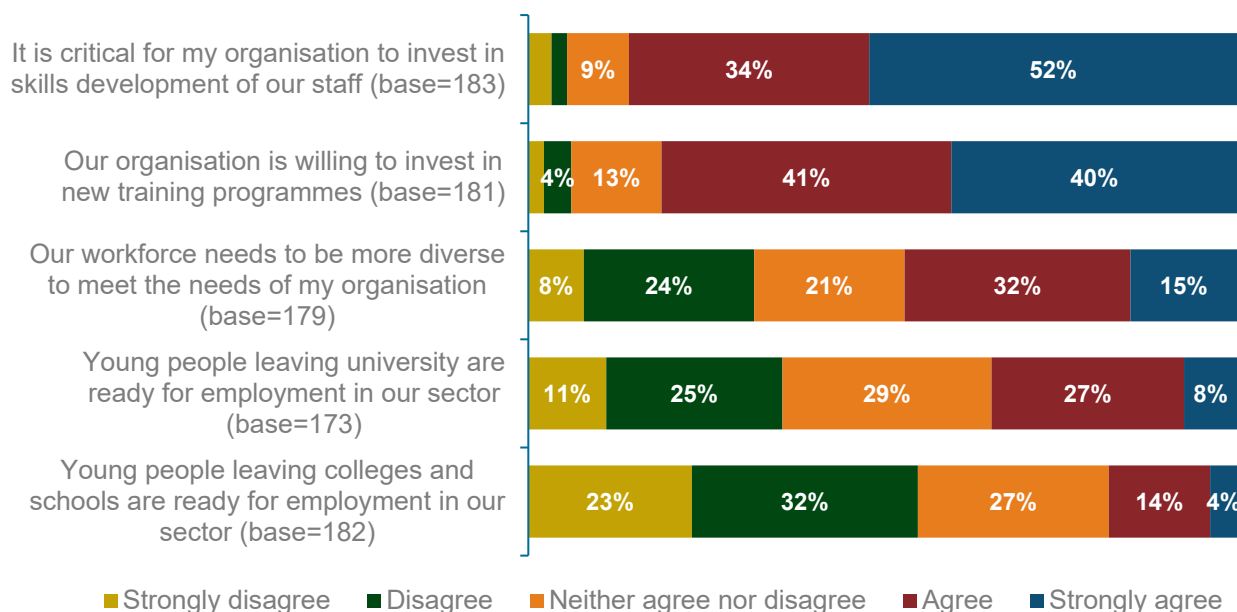
EOP employers were asked to state to what extent they agreed with a range of statements about skills and training. As shown in Figure 7 around nine in ten employers (86 per cent) strongly agree or agree that they believed it was critical for their organisations to invest in skills. A similar proportion (81 per cent) also strongly agree or agree that they were willing to invest in new training programmes.

¹⁸ Question wording: How much public funding for training did you access in the tax year ending [x]?

¹⁹ See for example Frontier Economics & CFE Research (2016) Costs and behaviours in the 16 to 18 apprenticeship system. DfE. London.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/562403/Costs_and_behaviours_in_the_16_to_18_apprenticeship_system.pdf

Figure 7: Employers' attitudes towards skills and training



Proportion of employers who agreed with the following statements about training and skills in their organisation (employer survey).

The views of longitudinal employers towards investing in the skills development of staff and being willing to invest in new training programmes remain unchanged. This is in the main due to the high agreement levels measured with employers at the start of the programme. This reflects the findings in the earlier section whereby employers are not increasing the already high volume of training they offer.

Satisfaction with training

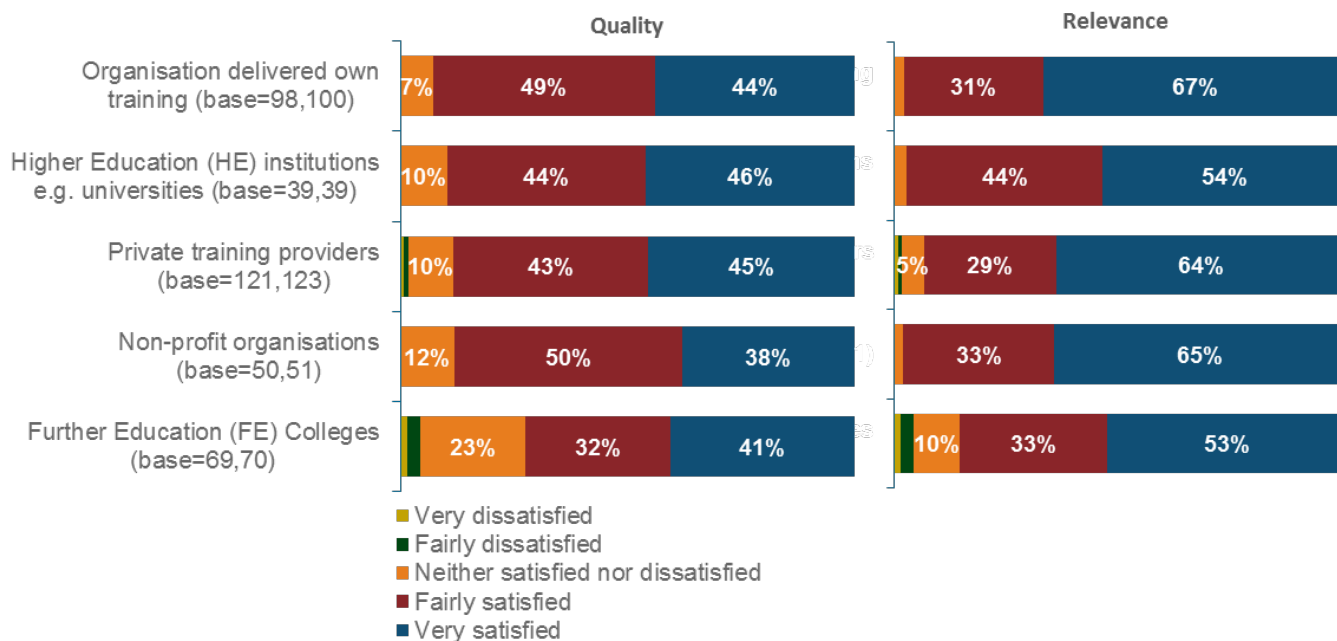
EOP employers who had arranged off the job training were asked what sources of training they had used. The majority (91 per cent) used private training providers, 74 per cent had delivered their own training, 53 per cent had used a Further Education college, 39 per cent a non-profit organisation and 30 per cent a Higher Education institution. A small proportion (1 per cent) reported using other sources such as a supplier or a trade/industry body.

Overall, employers were satisfied with the training they received across different sources. A high proportion (93 per cent) of employers stated they were 'very' or 'fairly satisfied' with the quality of their own training, with Higher Education institutions (90 per cent), with private training providers (88 per cent) and non-profit organisations (88 per cent). (Figure 8).

Employers were also asked to state to what extent they were satisfied with the relevance of training received from different sources. As with their satisfaction with quality, overall employers were very or fairly satisfied with the relevance of the training they received.

In the case of both quality and relevance, there was little change between the two sampling points for longitudinal employers.

Figure 8: Employers' satisfaction with the quality and relevance of training



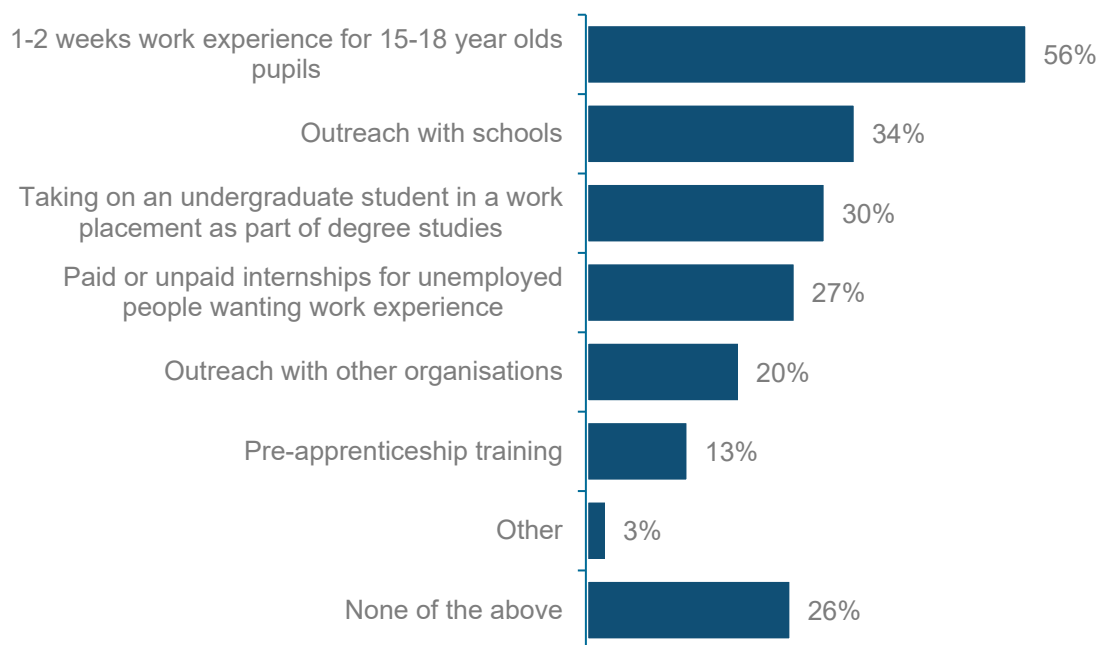
Proportion of employers that were satisfied with the quality of training with the following types of providers (employer survey).

Two types of training had a large enough base size to compare between quality and relevance. For both their own training and that of private training providers, around 20 percentage point more employers were likely to be 'very satisfied' with relevance compared to quality.

Use of non-training activities

Employers at SPB were asked what outreach, pre-employment or work experience activities they undertook in the previous tax year. Two-thirds of employers offered some form of non-training workforce development activity (74 per cent). Just over half (56 per cent) of employers offered work experience for 15-18 year old pupils, 34 per cent undertook outreach with schools, 30 per cent took on an undergraduate student either as a work placement or as part of degree studies and 27 per cent provided paid or unpaid internships for unemployed people (see Figure 9). There was little change in employers' use of these programmes between SPA and SPB with the proportion stating 'none of the above' at 27 per cent at SPA compared with 26 per cent at SPB.

Figure 9: Types of non-training activities offered



Types of work experience, pre-employment programmes and outreach that employers offered in the previous financial year (employer survey). Base=184.

Employers were asked how many individuals benefited from work experience and undergraduate work placements in the previous financial year. Amongst those who offered work-experience opportunities for pupils 57 per cent of employers stated they have given up to 3 opportunities, 28 per cent stated between 4 and 10, 9 per cent stated between 11 and 20 and the remaining 6 per cent stated more than 20. Finally, amongst those who offered undergraduate students work placements 71 per cent offered this to 3 or less students, 20 per cent reported this for between 4 and 10 students and the remaining 9 per cent to 11 or more students.

Chapter 4: Qualification levels and proficiency of workforce

This chapter explores qualification levels and skills proficiency covering first the qualification profile of EOP employers' workforce among survey respondents. The sector proceeds by exploring the proficiency of staff and the skills which employers stated employees needed to develop. How employers' utilise skills and capital are described.

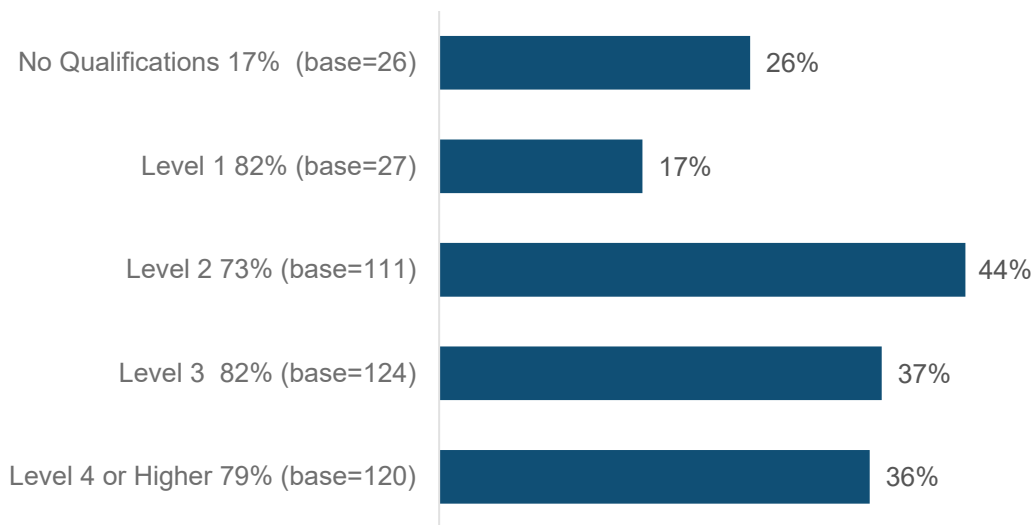
The section moves onto learners' current employment status alongside how they perceive their own skill levels. Finally, issues concerning employee vacancies are described included analysis of those classed as hard to fill.

Workforce qualifications, skills and proficiency

Workforce qualifications

Employers reported a variety of qualification levels amongst their workforce, as shown in Figure 10. A small proportion of employers (17 per cent) at SPB reported employing staff with no qualifications. For the small number of employers that did, an average 26 per cent of their workforce held no qualification. Figure 10 goes on to show over four-fifths (82 per cent) of employers employed staff with a Level 1 qualification, accounting for 17 per cent of their workforce. Just under three-quarters of employers (73 per cent) employed staff with a Level 2, representing under-half (44 per cent) of their workforce. Just under four-fifths of employers reported to be employing staff with a Level 3 (82 per cent), with a similar proportion at Level 4 (79 per cent). The average composition of staff with these qualifications was broadly the same at 37 per cent and 36 per cent respectively. Therefore, the workforce for most EOP employers was usually qualified to at least Level 2 at Sampling Point B.

Figure 10: Average workforce qualification levels (SPB)



Employees' skills and proficiency

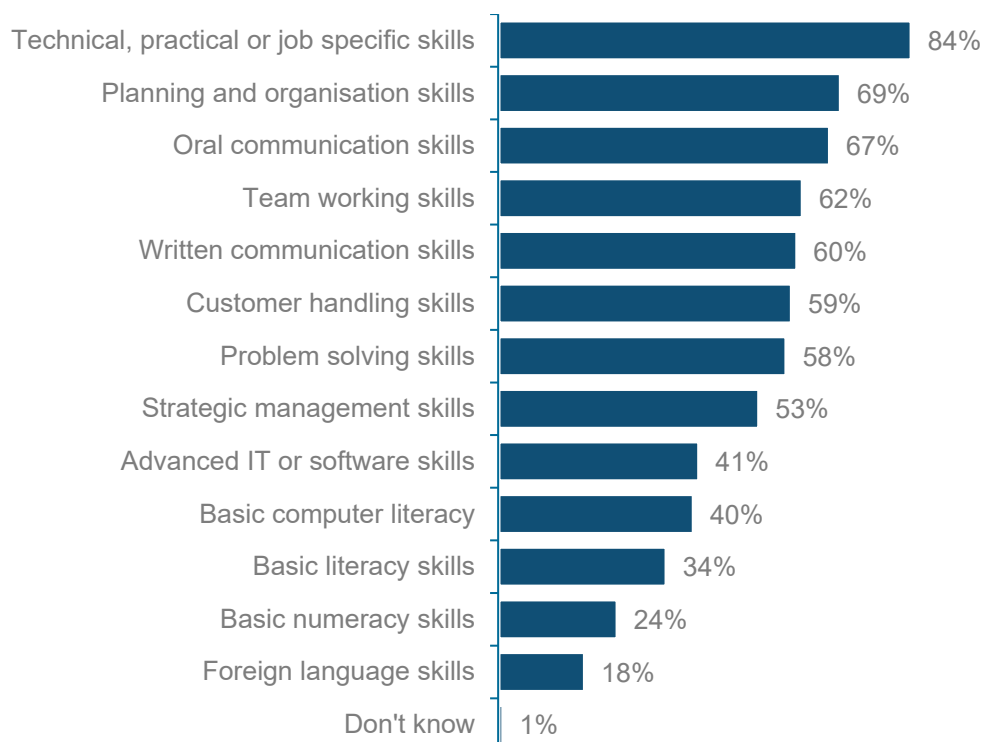
Employers were asked what proportion of people working at their organisation were fully proficient in their role in the previous tax year (to when the survey was undertaken). Half (51 per cent) stated that all of their staff were fully proficient.

Two-fifths of all employers (40 per cent) reported that between 75 per cent and 99 per cent of their staff were fully proficient. This leaves around one-in-ten with mark skills deficiencies. 6 per cent stated that between 50 per cent and 74 per cent were fully proficient and the remaining 4 per cent stated that less than 50 per cent were proficient (with 2 per cent reporting that none of their staff were proficient).

Two-thirds (66 per cent) of employers who had some staff who were not fully proficient stated that this had a minor impact on how their organisation performs and a further 18 per cent reported this had a major impact. Only 17 per cent stated it had no impact on their organisation, this has decreased from the same group of employers whereby 35 per cent stated no at the start of the programme.

Employers reported a range of skills which they felt learners needed to improve to become more proficient (as shown in Figure 11 below). The majority (84 per cent) reported job-specific skills needs, 69 per cent planning and organisational skills needs and 67 per cent oral communication skills.

Figure 11: Skills employees need to improve



Proportion of employers who stated each skill that their staff needed to improve (who did not report 100 per cent proficiency in staff) (employer survey). Base=91.

Skills and equipment utilisation

Nearly two-fifths (37 per cent) of employers reported that in the previous tax year their workforce were overstretched, just under three-fifths (57 per cent) said their workforce were used at a satisfactory level and only 5 per cent reported that their staff were underutilised. Employers were also asked whether their capital (such as buildings, plant and machinery, equipment, vehicles and computer hardware) was used at a satisfactory level or not. Nearly three-quarters (73 per cent) reported it was used at a satisfactory level, 7 per cent stated it was underutilised and 19 per cent reported that it was overstretched.

Learners' current occupations

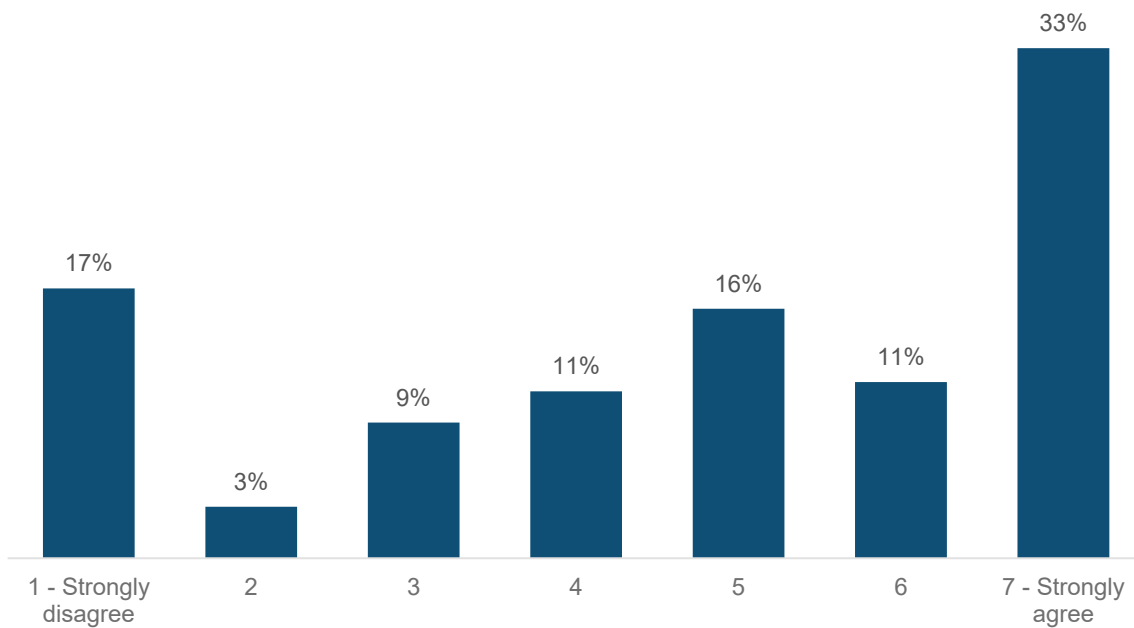
The majority of EOP learners were currently in employment (93 per cent). Only 4 per cent stated they were unemployed and 2 per cent stated they were unemployed but not looking for work (e.g. in full time education). Of those who were working at the time of the SPA survey four-fifths (79 per cent) were working for the same employer and of those 81 per cent were still in the same role as at SPA.

In total 36 per cent of learners who were employed at SPA had changed role or had moved to a new employer. Of this group just over half (55 per cent) reported that this change was classed as a promotion. Learners were asked to specify their current job role

which was then coded into Standard Occupation Classifications (SOC)²⁰. Over four-fifths of learners who were employed at both SPA and SPB (82 per cent) indicated that their SOC code had not changed. Of the remaining 18 per cent of learners 11 per cent reported an increase in their SOC code classification and 7 per cent reported a decrease. When investigating this further the majority of those who experienced an increase (91 per cent) had progressed by at least one major group and for those experiencing a decrease 75 per cent had dropped by one or more major group.

Those learners who thought they had received a promotion or had moved into employment from previously being unemployed were asked to rate on a scale of 1-7 (where 1 is strongly disagree and 7 is strongly agree) to what extent they thought that undertaking their training through EOP had contributed to them gaining this role. On average across learners a mean score of 4.7 out of 7 was given. As presented in Figure 12, one-third (33 per cent) strongly agreed with this, 11 per cent responded with a six and 16 percent providing a score of five.

Figure 12: Extent to which EOP contributed to learners' new role since SPA



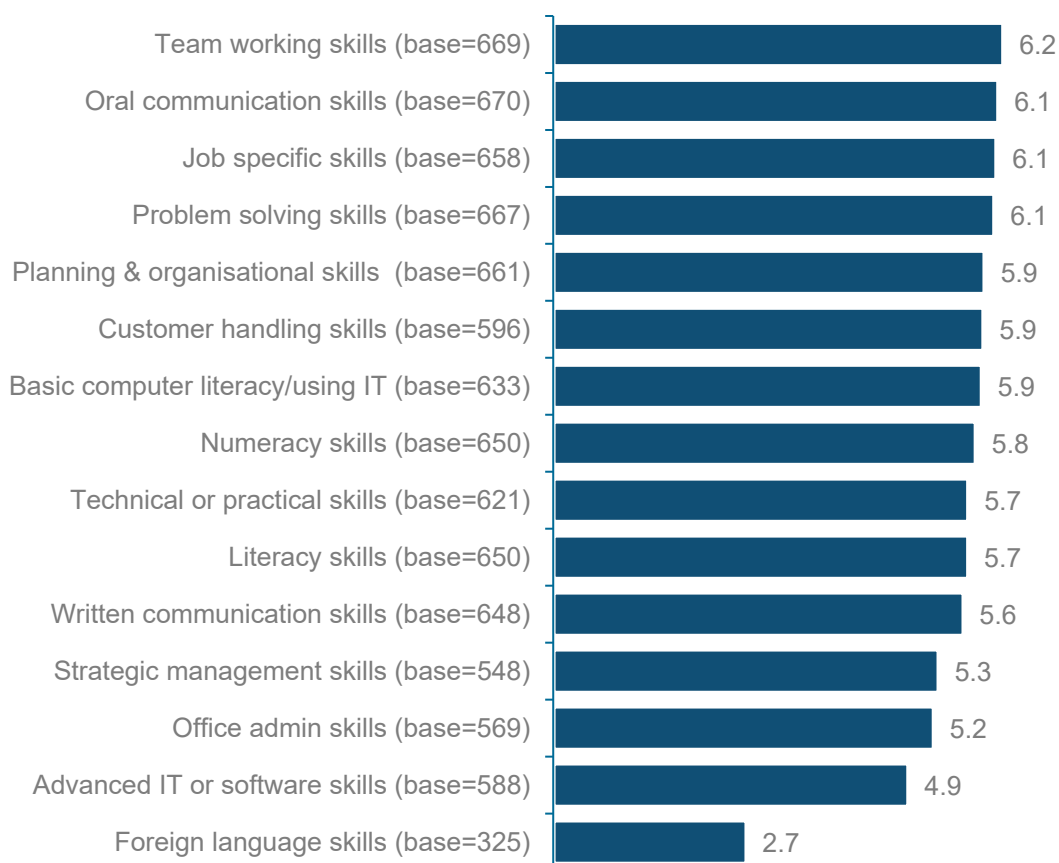
Learner response that EOP contributed to their new role (Learner survey). Base=150.

²⁰ Learners were asked to specify their job title in both SPA and SPB. Job titles were entered into Cascot (Computer Assisted Structured Coding Tool) <http://www2.warwick.ac.uk/fac/soc/ier/software/cascot/> for analysis.

Skill levels and utilisation

Learners who were in employment were asked to rate, on scale of 1-7 (where 1 is strongly disagree and 7 is strongly agree) to what extent they agreed with statements regarding their knowledge and skills needed to do well in their job. Across most skill areas that were applicable to a learner's current job high average scores were given (above 5) to the various statements. Only Advanced IT or software skills and foreign language skills were given scores below 5.

Figure 13: Learners reported skills levels



Mean score on a scale of 1-7, where 1 is very weak and 7 is very strong, how would you rate your knowledge, skills and attributes needed to do well in your job? Please state not applicable if this skill is not required for your job (learner survey).

Learners did not report an increase in skill levels at SPB. However, the mean scores for learners' self-reported skill levels in Figure 13 are already high meaning it is likely that a significant intervention would be required to improve skills to an even higher benchmark. The data also covers both apprenticeships and non-QCF training. The latter is often short duration and hence it is unlikely that such training would deliver across-the-board improvements in a number of different skills.

Some analysis on changes for apprentices only was completed which did identify a statistically significant increase on one specific skill: Strategic Management. Although

there was an improvement in the Technical or Practical Skills item, the change was not significant. There was no difference in the ranking of self-reported skill levels for each item between apprentices and other learners.

Learners were also asked to rate, on a scale of 1-7 (where 1 is strongly disagree and 7 is strongly agree) to what extent they agreed with statements regarding their job. On average learners provided a score of 6.3 out of 7 to the statement 'I have the knowledge and skills needed to do the job well' and 5.8 to 'I have enough opportunity to use the knowledge and skills that I have'.

Workforce age

Employers were asked to state since their original interview at SPA whether the average age of their workforce had increased, decreased or stayed the same. Over one-half (57 per cent) of employers reported that their workforce age had stayed the same. One-quarter (25 per cent) reported that it had increased and 17 per cent reported that it had decreased.

Employer vacancies

One-fifth (21 per cent) of employers reported that no one had left their organisation in the previous tax year. Half (50 per cent) of employers stated that between 1 and 5 people left their organisation in the previous year, 10 per cent stated between 6 and 10 employees left and 19 per cent reported that 11 or more people left their organisation.

Over two-fifths (46 per cent) of employers reported that they currently had vacancies. One-sixth (15 per cent) stated they had 1 vacancy, 6 per cent had 2 vacancies, 12 per cent had between 3 and 5 vacancies and 14 per cent had 6 or more vacancies. For those employers who currently have vacancies, just over half (57 per cent) reported that some of their vacancies were proving hard-to-fill. For almost two-fifths (42 per cent)²¹ this was just one vacancy that was hard to fill, for 17 per cent this was 2, for 33 per cent this was for between 3 and 10 and for 8 per cent this was for 11 or more vacancies.

When asked why they were proving hard to fill²² just over one-quarter (29 per cent) stated this was because applicants had not been of sufficient quality, 21 per cent reported there had been few/no applicants and 50 per cent stated both of these reasons. Of those who stated that applicants were not of sufficient quality (only 38 employers stated this), 24 stated this was due to a lack of skills, 22 reported they lacked the work

²¹ Please note this is a base of 48.

²² *ibid.*

experience required, 18 stated they lacked the qualifications they looked for and 14 stated they had a poor attitude, motivation and/or personality.

Employers were asked what, if anything, they were doing to overcome the difficulties they were facing in finding candidates to fill the hard-to-fill vacancies.²³ Only 17 per cent stated nothing, 40 per cent stated they were using new recruitment methods or channels, 15 per cent were prepared to offer training to less well qualified recruits, 14 per cent were increasing advertising/recruitment spend, 13 per cent were increasing the training given to their existing workforce, 6 per cent were increasing salaries and 6 per cent were expanding trainee programmes.

²³ *ibid.*

Chapter 5: Impact of EOP

This section of the report examines the impact EOP from the views of the employers involved and the learners who were trained. Impact is covered in two ways. The first is a descriptive analysis of self-reported impacts based on survey questions posed to employers and learners. The second is econometric impact analysis exploring the training practices of employers and wage gains for learners.

The chapter is structured by first summarising the methods used for the econometric analysis. Impact analyses for employers is then presented, followed by that for learners. Each impact section first presents the self-reported impact findings followed by the econometric analysis for each audience.

Summary of econometric methods used

A full description of the econometric methods adopted is provided in Appendix C. To summarise, the econometric analysis utilises treatment (EOP) and control groups which are both observed at two points in time, before (baseline) and after (follow-up) the policy intervention. A difference-in-differences (D-i-D) estimator was used in the econometric impact analysis. Descriptive statistics explore the difference between the EOP and control groups at baseline and follow-up. A regression adjusted D-i-D estimator on matched observations is then used to estimate the effect of the EOP intervention on selected outcomes:

- For employers, three outcomes were tested: the proportion of employers doing any training, the average number of workers trained, and the average proportion of the workforce trained.
- For learners, two outcomes were tested: hourly wages and differences in annual incomes. In the case of apprentices, this was achieved comparing to a survey control group of apprentices. For other learners, primary data was compared to changes found in a matched comparison group derived from the Labour Force Survey.

EOP and control group employers and learners are matched on observable characteristics, in order to make them as similar as possible²⁴. Propensity Score Matching (PSM) ensures that any remaining differences in outcomes are due to the EOP intervention rather than any difference in baseline characteristics between the two groups. PSM matches treatment and control group subjects according to a single

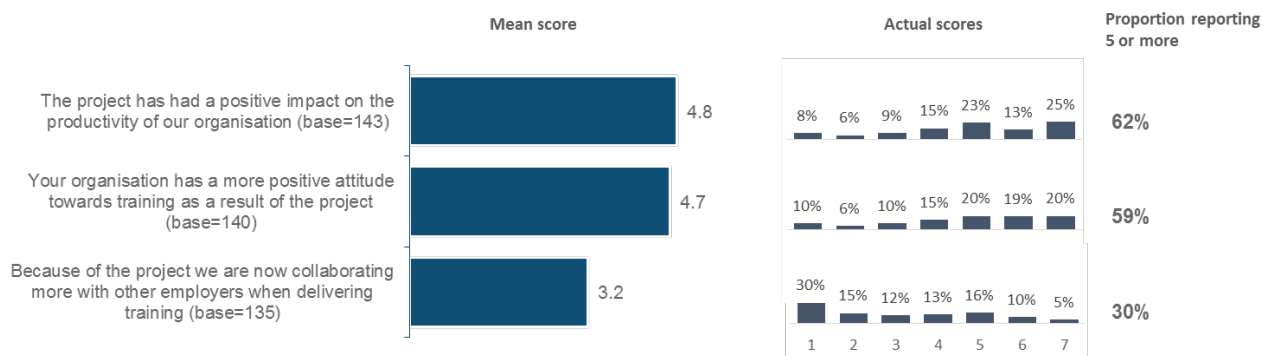
²⁴ The observable characteristics used for matching are those listed in Tab 18 for employers and Tab 24 for learners.

variable; the propensity score. The propensity score is the predicted probability that any employer will be treated (i.e. be involved in the EOP programme) or that the apprentice undertook their apprenticeship in an EOP firm. It is found by estimating a probit regression on the pooled sample of the treatment and control groups (with separate regressions for employers and learners). The predicted probabilities from this regression then give the likelihood of involvement in EOP on the basis of their observable characteristics. Employers/learners in the treatment group are then matched to control group employers/learners who look like they should have engaged in EOP on the basis of their observable characteristics.

Employers self-reported impact of EOP

Treatment employers were asked to rate on a scale of 1-7 to what extent they agreed that taking part in EOP has had an impact on their organisation in a range of ways (where 1=strongly disagree and 7=strongly agree). Figure 14 shows that on average employers provided a mean score of 4.8 to the project having a positive impact on the productivity of their organisation with three-fifths (62 per cent) providing a score of 5 or more. This was closely followed by a more positive attitude towards training with a mean score of 4.7 and 59 per cent stating 5 or more. The project leading to employers collaborating more with other employers when delivering training received a mean score of only 3.2 (below the mid-point of 4) with only one-third (30 per cent) providing a mean score of 5 or above.

Figure 14: Employers' view on the effectiveness of project on their organisation



Mean score to what extent do you agree that taking part in project has had an impact on your organisation, where 1=strongly disagree and 7= strongly agree (employer survey).

Medium sized employers (as classified at SPA) reported a higher mean score of 5.6 for the project having a positive impact on productivity when compared with large employers

at 4.4²⁵. Alongside this 71 per cent of medium sized employers gave a score of 5 or more compared with 48 per cent of large employers.

Employers were asked during depth interviews what impact they thought taking part in EOP had had on their organisation. Due the varied nature of the pilot projects the impacts experienced by employers varied greatly in scale and type. Around one-quarter of those who took part in depth interviews reported that it had no impact on their organisation.

I can't say that it has, to be honest because we've got a good track record with recruiting apprentices, we have an apprentice intake every year and we have a commitment to learning and development. So, that's across the board. So, I can't say that has changed anything.

Attitudes towards training

Around one-half of employers during the depth interviews reported that taking part in EOP had positively impacted the business's attitude towards training in some way. For some employers it was the first time they had taken on an apprentice and on reflection indicated that they would consider doing it again:

I think it has made a lot of our businesses think about what they do, do to train and develop the new staff, when they've seen that there was a proper supportive structure that was available.

Other employers reported being more committed to training and reported having already increased their training budget and increasing the volume of those they train across the business. In one example, one employer is still doing their NVQ programme and as result of their experiences of EOP have built in overtime for people to do their learning. Other employers suggested their experience of EOP would lead them to be more demanding of training providers in the future.

²⁵ There was no statistically significant difference with small employers

Project– increasing appetite for training

A project from the manufacturing sector used EOP funding to address skills shortages through engagement with local schools and its supply chain. The employer, in collaboration with other like-minded businesses, established a manufacturing group to provide critical mass in order to:

- Create an employer driven sector based apprenticeship;
- Undertake outreach with schools and individuals out of work (via a pre-apprenticeship training scheme); and
- Delivering training to their own staff and supply chain employers in the region.

In respect of the latter strand, they appointed skills co-ordinators to act as a broker with employers and they used it as an opportunity to encourage local employers to provide pre-apprenticeship places for the programme.

This approach overall was seen to have been successful at engaging with employers in providing appropriate and cost effective training, plus using funding to take care of any administrative burden to deter employer commitment. The project lead cited in particular examples of employers having engaged with apprenticeship training for the first time and continuing to do so after the project.

A lot of companies we worked with hadn't taken on apprentices before and they do now. I think that's largely because we introduced it to them and showed them how to make it a less daunting prospect, because we managed it on their behalf. I think they've learnt a lot from that and they now feel more comfortable with taking on apprentices and know how to go about it.

A minority of employers reported that the involvement in EOP had positively changed the mind-set of their Senior Management Team to invest in apprentice training for the first time rather than relying on their graduate recruitment programme.

It's set the standard and I think it will make it a lot easier, certainly for our more senior leadership team to understand the benefits when they see these twenty year olds that they can send abroad and they can trust them to go over and teach foreign graduates what we actually do. These are really success stories.

In respect of the sustainability of the training employers have done through EOP, some employers particularly SMEs have not continued with the training due to the associated time to train and costs that were previously subsidised under EOP. In other circumstances employers did not have the vacancies to take on new apprentices.

It's definitely something I would do again, but I would say that I've just got exactly the right amount of staff right now. The prospect of bringing anybody else in just at this point would probably be a bit unnecessary, but certainly going forward it would be something I'd really consider.

Timpson Group – foundation training programme

Timpson Group is a retail provider of over-the-counter services in shoe, watch, jewellery and mobile phone repair. The group is passionate about solving the issue of mass unemployment amongst ex-offenders and believe they are untapped potential for UK businesses. Timpson already worked with over 75 prisons prior to EOP and is the largest employer of ex-offenders in the UK. The EOP funding allowed Timpson to expand its programme assisting ex-offenders into employment. Prior to the funding the group was planning to scale back its programme and planned to close the three academies operating within prisons. Funding was approved to provide day release work experience (to offenders released on Temporary Licence) in their stores and a 12 month apprenticeship to a target 670 additional ex-offenders. As well as retaining the three academies they had they opened a further four.

The pilot engaged nearly 1,000 ex-offenders, well above their target, however the 60 per cent completion rate of their training programme was lower than anticipated and overall not sustainable. The pilot enabled them to test new delivery approaches and they identified higher completion rates in female and low category prisons. They have now introduced a more selective recruitment policy to increase retention rates and have decided to overturn their decision to close the academies and will continue to invest in apprenticeship training (circa 150 apprenticeships a year) post EOP.

We just opened a brand new academy in November 2016. EOP really was a springboard for us to say this really does work, and actually we are going to carry on now funding it ourselves.

One employer reported having decided to keep their pre-apprenticeship model in place after EOP owing to the high retention rates of their learners, seeing the investment in this outweighing the loss of learners through their main apprenticeship programme.

Now we know what works, we can build it up. We've got a model that is sustainable that gives us good retention rates, gives us good quality colleagues, that gives them fantastic training. We would have struggled to do that I think without that real injection of cash.

Other employers replied that while still training staff they had reverted back to similar training programmes prior to EOP owing to the costs of training but suggested that they had purchased additional elements that were created through EOP.

Productivity

Around one-third of employers cited examples where taking part in EOP had improved their productivity. As previously mentioned, the acceleration of training and the upskilling of learners in more relevant, sector specific training was seen by employers to have equated to more efficient workers. A minority of employers also reported that the decision to invest in training had improved staff morale and subsequently improved productivity.

Some employers highlighted the benefits that had been accrued through business improvement or sales training leading to the identification of/development of new products or orders:

What we've been able to do, with the training that we do, we've been able to develop extra products. That adds to our turnover because we've been able to do add-ons to a lot of the existing customers.

One employer cited that the training had positively affected the culture in the business to encourage staff to not be afraid of new things to try and improve productivity:

So, something that they came up with on the shop floor was a little trolley so, you stack your parts upright and that way you can get to any part you want. The training made them think about little things...but there's lots of little things and improvements that are made [which] allow the product to travel through the factory quicker. So, yes, definitely an improvement.

Sector-wide impact

Around half of all employers believed that a positive impact would be achieved for the sector in the long-term through the development of new apprenticeships that were targeted and suited to the needs of their sector. Impacts mentioned in particular were the value that they would have on employers who may have discounted apprenticeships previously as a valuable mechanisms to skill young people:

Previously, after two decades of neglect, the mind-set was simply, 'No point employing apprentices. They go to college, learn nothing. The mind-set now is about succession training, about the quality of young people, [this has] changed attitudes massively.

Linked to this, some EOP projects had used funding to influence and support their own supply chain's approach and investment in training, and in doing so had introduced them to NVQs and apprenticeships for the first time. They felt this would have a sustainable impact on training across the sector and improve their supply chain's productivity:

A lot of companies we worked with hadn't really taken on apprentices before and they do now. I think that's largely because we introduced it to them and showed them how to make it a less daunting prospect because we managed it on their behalf. I think they've learnt a lot from that and they now feel more comfortable with taking on apprentices and know how to go about it.

Furthermore, EOP projects that brought together businesses, or employees across the sector were seen to have improved their networking (e.g. a forum to share experiences and learn from one another's business practices) and degrees of collaboration (e.g.

working together to develop apprenticeships via the trailblazer initiative). Other examples included improving the sector's profile and voice and with it increased business opportunities. In one example, creating both social and community benefits.

As a group [that's now increased] we've been successful in bidding for a £10 million European social contract. It will help the community back into work, people who are the furthest away from the job market. It will be used to work with them. So, there have been other outcomes from our involvement in EOP.

It is worth noting that feedback from other employers suggested that a forum or networking opportunity with other EOP projects during the pilot would have been welcomed to improve this further.

A minority of employers also commented that altering apprenticeship frameworks to provide greater depth of training (as opposed to a perceived restricted framework) would lead to widening career opportunities and interest in the sector. Given that an aging workforce was a key driver of many EOP projects, it was anticipated that amendments to their training programmes would be an attractive proposition to potential future entrants:

We've now got some products, some apprentice products, which are engaging to young people. They don't now see the route into our industry as a one-trick pony, a dead-end job, something that you do if you've failed at everything else.

A minority of employers did however highlight that whilst good for their business and immediate network, wider sector impacts would not be felt. In this respect, employers felt that the Government's Skills policy was still too geared on larger firms therefore whilst beneficial at the time, impacts would be limited:

Government policy on funding for skills has got to consider quite deeply what SMEs need because SMEs are such a large fraction of employers. If these improvements are not easily accessible to SMEs then we just won't bother because we've got too much else to do and then it just means that the money is going to the same old people for the same old stuff and we get the same old result.

In addition, based on the interviews conducted, projects that had focused predominately on outreach activity were less likely to have been positive in respect of sector impacts compared to those that had developed specific training products and services. While there seems to have been some reputational impacts among their local communities (schools, businesses for example) their overall skills or recruitment objective were regarded generally as not having the same impact.

Employer Outcomes from econometric analysis

Table 5 below reports the number of responses to the employer surveys at baseline (before - SPA) and follow-up (after - SPB) from the EOP treatment group and the control group. As is clear from the table, response rates to follow up are relatively low, at around 41 per cent for both groups. Low responses rates can be in part attributed here to a refusal to participate in an interview – a quarter (25 per cent) of those who took part at SPA refused to do so at SPB. There was also some loss due to changes at the level of the business. Around one in ten (11 per cent) of SPA contacts had either left the company or no longer had an operational contact number. Nearly one in six contacts (17 per cent) were unfulfilled appointments meaning that a telephone interviewer had made contact with the right person but had been unable to conduct an interview. Such businesses were called seventeen times on average.

Table 5: Number of observations - Employers

	Before (Sample Point A)	After (Sample Point B)
EOP treatment group	446	184
Control group ²⁶	608	253
Total	1,054	437

One potential problem with attrition in the longitudinal survey is that the group of employers available for analysis at SPB may be systematically different to the full set of employers available at SPA, and this can lead to selection bias in the result. The regression adjusted difference-in-difference approach with matching, that we employ to estimate the effect of EOP is designed to control for this type of selection bias. However, having a non-representative sample at SPB may still limit the applicability of the results to the full population of employers.

In an attempt to explore whether or not any sample selection exists at follow-up, Table 6 explores the characteristics of the employer groups, comparing those who drop-out (SPA data only available) to those who remain at follow up (SPA and SPB data available). The lack of asterisks in Table 6 suggests that there are very few significant differences between the SPA and SPB firms within the EOP and control groups. For example, as shown by the first row in Table 6, just over 80 per cent of EOP employers were in the private sector at SPA and this remains the same at SPB; for the control employers the

²⁶ Control group is a combination of non-EOP employers (sampling frame from commercial databases or the ESS) and failed EOP bids.

proportion in the private sector is also similar at both SPA and SPB (at around 73 per cent).

For the control group two differences at SPA and SPB are statistically significant at 5 per cent. Firstly, those control employers who remain at SPB are much smaller on average than those at SPA (66 employees on average at SPB vs. 278 at SPA)^{27, 28}. Secondly, those control employers who remain at SPB are less likely to like to collaborate with providers of training.

In the EOP group one important difference is that those employers who took more of an interest in training issues and a more proactive approach to training are more likely to remain at SPB. This is shown by the four rows with asterisks towards the bottom of the table. In addition EOP employers in the Education sector are less likely to drop out and those in the 'Other' sector are more likely to.

Table 6: Characteristics of Employers

	EOP			Control		
	Dropout after SPA	Remain to SPB	Diff	Dropout after SPA	Remain to SPB	Diff
Private sector (%)	80.9	80.4	0.5	73.2	72.3	0.9
Mean employees (n)	473.2	941.6	-468.4	277.9	65.6	212.4*
Median employees (n)	24.0	25.0	-1.0	30.0	18.0	-12.0**
Workforce young (%)	34.8	33.3	1.5	29.1	26.2	2.8
Workforce old (%)	18.9	18.5	0.3	21.1	27.5	-6.4
Workforce qualified to Level 1 (%)	4.8	8.0	-3.3	9.6	7.2	2.4
Workforce qualified to L2 (%)	34.2	32.5	1.7	34.0	41.3	-7.3
Workforce qualified to L3 (%)	27.9	29.8	-1.9	35.5	24.2	11.3
Workforce qualified to L4 (%)	28.1	28.6	-0.5	31.6	33.2	-1.6
Staff development programme (%)	70.3	64.2	6.2	66.6	63.1	3.5
Workforce left in last year (%)	11.6	11.1	0.5	12.8	10.7	2.1

²⁷ This fall in average size is due to a small number of large control group firms dropping out between surveys, including one with 26,000 employees, and ten others with between 2,000 and 7,000 employees. The largest firm in the control group to remain in the sample has 1,800 employees.

²⁸ It is worth noting here that EOP employers at SPB are larger than at SPA (942 employees on average at SPB vs. 473 at SPA); however, this difference is not statistically significant, and furthermore, the median firm size barely changes.

	EOP			Control		
	Dropout after SPA	Remain to SPB	Diff	Dropout after SPA	Remain to SPB	Diff
Has hard to fill vacancies (%)	20.6	19.0	1.6	19.4	13.4	6.0
Workforce overstretched (%)	30.5	30.4	0.1	31.8	30.8	1.0
Capital under-utilised (%)	8.8	12.0	-3.2	11.0	7.1	3.9
Influences training (%)	49.6	48.9	0.7	53.5	46.2	7.3
Like to set skills agenda (%)	59.2	70.1	-10.9*	54.9	50.6	4.3
Like to design own training (%)	58.8	70.1	-11.3*	51.8	54.2	-2.3
Like to collaborate with employers (%)	65.3	76.1	-10.8*	58.9	55.7	3.1
Like to collaborate with providers (%)	72.5	84.8	-12.3**	71.8	63.6	8.2*
Think shortage of skills in sector (%)	56.9	65.8	-8.9	52.7	50.6	2.1
Manufacturing (%)	17.6	19.6	-2.0	15.2	13.0	2.2
Construction (%)	15.6	14.1	1.5	17.5	13.4	4.0
Wholesale & retail (%)	17.6	19.0	-1.5	19.2	15.8	3.3
Education (%)	1.9	7.6	-5.7**	3.9	4.3	-0.4
Health (%)	7.3	10.9	-3.6	7.9	11.9	4.0
Other services (%)	40.1	28.8	11.3*	36.3	41.5	-5.2

Note: Difference between drop-out and remaining employers statistically significant at **1 per cent *5 per cent significance level.

Table 7 reports the raw differences in the outcome variables for the unmatched analysis group of employers; that is employers in the control and EOP groups who provide data at both baseline (SPA) and follow-up (SPB). There are 437 firms in this analysis group as shown Table 5.

Row 1 in Table 7 reports the proportion of employers who funded any training in the previous tax year to the survey²⁹. Before the EOP intervention a significantly larger proportion of EOP employers funded training than in the control group of employers (96 per cent vs 81); but after the intervention these proportions have converged and the difference is no longer significantly different.

The final column shows the ‘difference-in-the-differences’, i.e. the amount by which the training variable changes more for the treatment group than the control group. The negative value for this column in row 1 shows that the proportion of employers who funded training changed by less in the EOP firms than in the control firms (in actual fact, it fell in absolute value for EOP firms).

Row 2 considers only reported training where the tax year asked about was definitely before EOP training began, and where the reported training was definitely during the year that EOP began, for the ‘before’ and ‘after’ reports respectively. This row is included in an attempt to take account of the fact that some of the ‘before’ estimates include observations asking about the tax year in which their EOP training started. In addition, the ‘after’ observations were designed to be taken 12 months after EOP training finished, and so some of the tax years asked about at SPB will not have included any EOP training. In the base case (row 1) we are therefore looking for the longer-term continued impact of EOP, rather than the short-term hit to training during the EOP phase. This row, on the other hand, specifically only includes those observations in the ‘after’ calculation where we are using data from a tax year that includes some EOP training. Row 2 includes around 50 per cent of the employers in row 1. We can see that although the proportion of firms training goes up, relative to the previous row, when we do this, the general conclusion, that EOP does not increase the proportion of firms training relative to the control group firms, remains, looking at the difference-in-differences³⁰.

²⁹ The relevant tax years are: ending 2012, 2013 or 2014 for SPA and 2015 or 2016 for SPB.

³⁰ To derive this row we have 3 reports of whether the employer trained or not: (i) at SPA for most recent tax year, (ii) at SPB for most recent tax year and (iii) at SPB for the year prior to EOP training starting. In this row, we use (i) and (iii) for the before estimates in the cases where the reported tax years are prior to EOP starting. We use (i) and (ii) for the after estimates limiting to the specific cases where the report is for the year in which EOP began. The results show little change from the previous row. Of those employers who said they trained at baseline when asked about year in which EOP started, all but 6 also trained in the year before EOP started when re-questioned at SPB.

Table 7: Raw Differences in Outcome Variables

	Before			After			Diff in diff
	EOP	Cont.	Diff	EOP	Cont.	Diff	
1. Any training ¹ (% of employers)	95.7	80.6	15.0**	87.5	85.8	1.7	-13.3
2. Any training (% of employers) (cases where we are sure the observed responses are before and during the EOP start year respectively) ²	92.6	80.6	12.0**	92.6	85.8	6.9	-5.1
3. Average number of workers trained ³	294.9	32.0	262.9	551.8	27.5	524.3*	261.4
4. Average number of workers trained (exclude where prop>2) ⁴	323.9	31.9	292.0	300.5	27.8	272.7	-19.3
5. Average number trained (exclude employers who report no workers trained in any category) ⁵	369.1	34.6	334.5	570.4	28.2	542.2*	207.7
6. Average proportion of workforce trained ⁶	57.9	57.1	0.8	65.6	62.6	3.0	2.2
7. Average proportion of workforce trained (cases where we are sure the observed responses are before and during the EOP start year respectively) ⁷	54.4	57.1	-2.7	59.0	62.6	-3.6	-0.9
8. Average proportion of workforce trained (exclude where prop>2) ⁸	46.5	48.1	-1.6	53.3	49.0	4.3	5.9
9. Average Proportion of workforce trained (exclude where no answer to any category rather than zero) ⁹	68.9	61.8	7.2	67.8	63.8	4.0	-3.2
10. Total proportion trained ¹⁰	55.5	24.7	30.7	58.0	43.0	14.9	-15.8
Proportion of total workforce trained in each category:							
11. Intermediate apprenticeship	5.0	1.5	3.5**	5.0	2.7	2.3*	-1.2
12. Advanced apprenticeship	2.0	0.7	1.2*	2.7	1.7	1.0	-0.2
13. Higher apprenticeship	0.2	0.2	0.0	0.5	0.3	0.2	0.2
14. Non-accredited apprenticeship	0.7	0.1	0.6	0.1	0.2	-0.1	-0.7
15. Leading to level 1 qualification	1.4	1.1	0.3	0.7	1.3	-0.6	-0.9
16. Leading to level 2 qualification	3.3	2.3	1.0	2.8	2.8	-0.1	-1.1

	Before			After			Diff in diff
	EOP	Cont.	Diff	EOP	Cont.	Diff	
17. Leading to level 3 qualification	2.5	2.0	0.5	2.7	2.2	0.6	0.1
18. Leading to level 4 qualification	3.2	1.5	1.7	1.3	1.5	-0.2	-1.9
19. Leading to no qualification, duration <1 day	22.6	22.2	0.4	29.7	30.7	-1.0	-1.4
20. Leading to no qualification, duration 1-2 days	11.2	13.4	-2.3	13.1	9.9	3.3	5.5
21. Leading to no qualification, duration 3 days+	5.0	7.1	-2.1	3.3	6.3	-3.0	-0.9
22. Other training	11.9	9.7	2.2	5.9	4.3	1.6	-0.6

Notes: The 'before' outcomes are only for the 437 firms that are also observed at SPB.

Difference between treatment and control group statistically significant at **1% *5% significance level.

1. Whether funded any training in previous tax year to the survey (tax year ending 2012, 2013 or 2014 for SPA and 2015 or 2016 for SPB).

2. Takes account of when EOP training took place, and considers only reported training where the tax year asked about was definitely before EOP training began, and where the reported training was definitely during the year that EOP began, for the 'before' and after reports respectively.

3. Numbers trained is the sum of the number of workers that employers report that they trained in the reported tax year in each of the 12 categories in rows 11-22.

4. Does not include any observation where the number of workers trained (from row 3) is more than double the reported number of workers.

5. Firms who say they train, but report no workers trained in any category, are excluded rather than included as zeros, in this row.

6. Average of the proportion of workers trained in each firm, as measured by number of workers trained, from row 3, expressed as a proportion of the average workforce size during the relevant tax year.

7. Uses only the reported numbers of trained workers in those firms identified and used in row 2.

8. Uses only the reported numbers of trained workers in those firms identified and used in row 4.

9. Uses only the reported numbers of trained workers in those firms identified and used in row 5.

10. Proportion of all workers in the treatment and control groups trained, measured as the sum of all workers trained in treatment/control group, expressed as a proportion of the total workforce across firms in treatment/control group.

Row 3 shows the number of workers trained; this is the sum of the number of workers that employers report that they trained in the reported tax year in each of the 12 categories in rows 11-22³¹. This is the only row of this table where the difference-in-differences is positive and significant, suggesting an increase in numbers trained due to EOP. However, this is simply due to the increasing difference over time in size of firms between treatment and control groups. As seen in Table 6, it is on average the larger treated firms but the smaller control group firms that remain in the survey at Sample Point B, so it is not surprising that we observe a larger absolute increase in the absolute number of trained workers in the treated firms.

Row 4 is a robustness check on row 3, and omits any observation where the number of workers trained is more than double the reported number of workers. The proportion can legitimately be greater than one, in high turnover firms, since it is the number of workers trained in a year, divided by the average workforce size during that year. There is also the issue of double counting of some of those trained, as mentioned in footnote 7. In row 4 the difference-in-differences is no longer statistically significant.

Row 5 is a further robustness check on row 3. Here, firms who say they train, but report no workers trained in any category, are excluded³². This row suggests the same result as row 3 the difference-in-differences is positive and significant, suggesting an increase in numbers trained due to EOP. However, this is due to the increasing difference over time in size of firms between treatment and control groups.

Rows 6 to 10 report variants on the proportion of workers trained. None of these rows display any significant difference-in-differences.

Rows 11 to 22 break the type of training down into different categories and report the proportion of total workforce trained in each category. There is an indication here that both before and after the EOP intervention, the EOP group were providing more intermediate apprenticeship training than the control group. Also at baseline the EOP group were providing more advanced apprenticeship training, but this difference had disappeared at follow-up due to growth for both groups, which was faster for the control group.

The next two tables report results for the matched employers. EOP and control group employers have been matched on observable characteristics (those listed in Table 6), in order to make them as similar as possible. For example, we know from Table 6 that EOP employers take more interest in training issues than the control group; therefore the groups are matched on this characteristic (as well as the others) in order to ensure that any remaining differences in outcomes are due to the EOP intervention rather than this

³¹ Note that the total in row 3 includes some double counting, to the extent that firms trained the same worker in different categories of training.

³² In row 3 instead of being excluded, the zero reports for these employers are included

difference in baseline characteristics. PSM has been used to match employers and Table A1 in the Annexe reports the balancing tests on those employer characteristics listed in Table 4. Nearest neighbour matching with a calliper was used for the reported results. The total absence of asterisks from Table A1 shows that the PSM has worked well, and the matched sample is well-balanced. The percent bias is less than 5 per cent for most variables, and there is a large reduction in bias from matching for most variables. Further, the difference in mean values between EOP and control groups is statistically insignificant for all variables.

Table 6 is basically a replication of Table 5 but using matched employers and showing the treatment effect. It is clear from the average treatment effect on the treated (ATT) in this table that any significant differences apparent in Table 7 have now disappeared. Thus where we saw in Table 7 a positive and significant difference-in-differences in the number of workers trained (rows 3 and 5), these differences have disappeared once employers are matched on the observable characteristics. In particular here this has controlled for the increasing difference over time in size of firms between treatment and control groups, as seen in Table 6.

Table 9 reports the regression-adjusted difference-in-differences treatment effects. This is a regression of change in the relevant training variable on the treatment variable and the control variables listed in Table 6. The reported coefficient treatment variable (θ from equation 1) measures the difference-in-differences, i.e. the effect of the EOP intervention. In the matched sample there is no effect of EOP on the proportion of employers doing any training, or on the average number of workers trained, or on the average proportion of the workforce trained.

Table 8: EOP Treatment Effects – Employers (Propensity Score Matching Results)

	Before			After		
	EOP	Control	ATT	EOP	Control	ATT
Any training	0.925	0.813	0.112 (0.058)	0.850	0.860	-0.009 (0.059)
Any training (set cases ¹)	0.883	0.766	0.117 (0.071)	0.935	0.896	0.039 (0.059)
Number trained	30.06	20.84	9.21 (10.67)	34.83	20.48	14.36 (11.15)
Proportion trained	0.625	0.584	0.041 (0.098)	0.647	0.635	0.012 (0.118)
Proportion trained (set cases ¹)	0.650	0.481	0.170 (0.168)	0.633	0.661	-0.028 (0.142)
Proportion of total workforce trained in each category:						
Intermediate apprenticeship	0.043	0.021	0.022 (0.016)	0.041	0.019	0.022 (0.016)
Advanced apprenticeship	0.013	0.003	0.010* (0.050)	0.014	0.027	-0.013 (0.011)
Higher apprenticeship	0.001	0.004	-0.004 (0.004)	0.002	0.006	-0.004 (0.007)
Non-accredited apprenticeship	0.002	0.002	-0.000 (0.002)	0.002	0.000	0.002 (0.001)
Leading to level 1 qualification	0.019	0.029	-0.010 (0.019)	0.011	0.013	-0.002 (0.019)
Leading to level 2 qualification	0.041	0.013	0.028 (0.015)	0.024	0.031	-0.007 (0.024)
Leading to level 3 qualification	0.036	0.003	0.033** (0.010)	0.034	0.031	0.003 (0.027)
Leading to level 4 qualification	0.033	0.015	0.018 (0.023)	0.012	0.009	0.003 (0.005)
Leading to no qualification, duration <1 day	0.245	0.211	0.034 (0.072)	0.302	0.217	0.084 (0.063)
Leading to no qualification, duration 1-2 days	0.131	0.099	0.032 (0.041)	0.112	0.117	-0.005 (0.039)
Leading to no qualification, duration 3 days+	0.044	0.085	-0.040 (0.034)	0.014	0.025	-0.011 (0.012)
Other training	0.109	0.167	-0.058 (0.075)	0.055	0.014	0.041 (0.024)

Note: Note: ATT = average treatment effect on the treated, that is the estimated change in the outcomes of the treated firms, due to the EOP treatment. See Table 5 notes for details on which employers are included in particular rows.

Matching variables are those included in Table 4. See Annexe Table A1 for balancing tests on these variables.

**Average treatment effect statistically significant at **1 per cent level * 5 per cent level. Standard errors in parentheses.

¹ Cases where we are sure the observed responses are before and during the EOP start year respectively

Table 9: Regression-adjusted Difference-in-Differences Treatment Effects

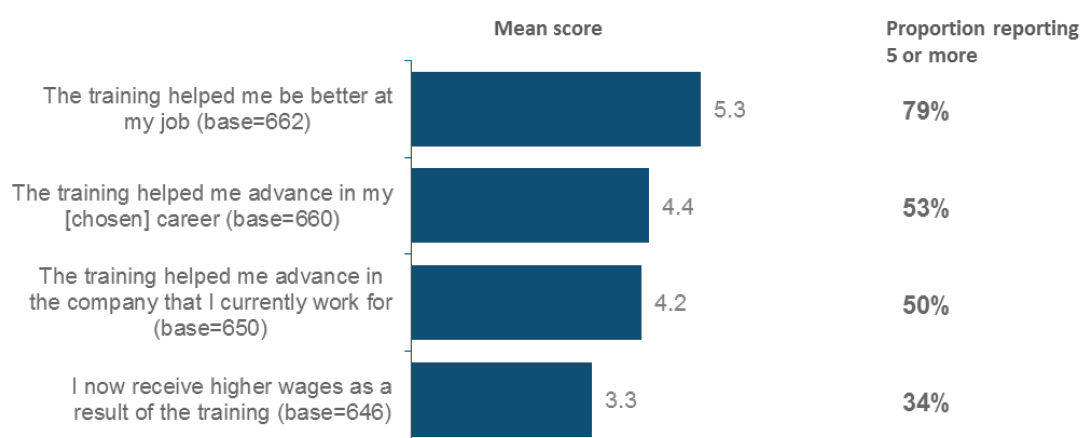
	Unmatched Sample	Matched Sample
Any training (% of employers)	-0.157 (0.050)**	-0.095 (0.061)
Average number trained	115.2 (178.9)	2.903 (12.227)
Average proportion of workforce trained	-0.061 (0.100)	0.022 (0.119)

Note: Regression of change in training variable on the treatment variable and the control variables listed in Table 4. Coefficient on treatment variable, measuring the difference-in-differences, reported. Statistical significance at **1% level * 5% level shown. Standard errors in parentheses. Final column restricts the sample to matched observations only.

Learners self-reported impact of EOP

Learners were asked to rate on a scale of 1-7 (where 1 is strongly disagree and 7 is strongly agree) to what extent they agreed with a range of impact statements about the training they undertook through EOP. Nearly four-fifths of learners (79 per cent) reported that the training they undertook helped them to be better at their job with a mean score of 5.3. Around one-half of all learners believed that the training had helped them to advance in their chosen career (53 per cent) and that it had enabled them to advance in the company they currently work for (50 per cent). One-third also stated that they now received higher wages as a result of the training (34 per cent)

Figure 15: Learners' views on the effectiveness of training towards their career



Mean score of how far do you agree with following statements about the training you were doing around the time when you were last interviewed, where 1 is strongly disagree and 7 is strongly agree (learner survey).

Depth interviews with employers show that there was a general consensus that the training that had occurred had been beneficial for current and future employees (e.g. those that had engaged on a bespoke pre-apprenticeship programme). Reports of employees being exposed to a wider spectrum of business operations and becoming

skilled in more technical areas, meant they were more valuable to the business and more productive sometimes equating to higher wages.

Comments were also made that previously pressure on a single focused area meant any training in other areas became a distraction. Alterations to training programmes through EOP meant it became part of their training and subsequently learners became better skilled through integrated training.

This model allowed us to tailor the apprenticeship [and] do that and within the company. The trainees spent two or three up to six or eight week blocks in different departments, experiencing what the department did and getting an understanding of how the company as a whole works and how they fitted into it.

Employers also gave examples of staff becoming promoted on the back of the training they did through EOP. In respect of outreach activity lead employers were positive and proud of their efforts to have provided training and work opportunities to those disengaged from the labour market. Many were noted as subsequently being employed by business involved in EOP or going on to other forms of training and employment armed with sector specific skills and competencies.

Learner Outcomes from Econometric Analysis

Our analysis of learner outcomes follows the same methodology as for the employer outcomes as described above. Our focus in the main analysis is on apprenticeship qualification training only. We subsequently analyse non-QCF training separately. Table 10 reports the number of observations for the learners at baseline (SPA) and at follow-up (SPB).

Table 10: Number of Observations – Learners

	Before (Sample Point A)	After (Sample Point B)
<i>All Learners:</i>		
EOP	2,388	727
Control	2,648	614
Total	5,036	1,341
<i>All Apprentices:</i>		
EOP	679	198
Control	2,053	607
Total	2,732	805
<i>Intermediate apprentices:</i>		
EOP	165	47
Control	1,017	296
Total	1,182	343
<i>Advanced apprentices:</i>		
EOP	369	108
Control	940	275
Total	1,309	383
<i>Higher apprentices:</i>		
EOP	121	36
Control	78	28
Total	199	64

As can be seen, the overall follow-up rates are around 30 per cent for EOP and 23 per cent for the control group. However, for apprenticeships, follow-up rates at SPB are 30 per cent for both groups, and slightly higher for Higher apprenticeships amongst the control group. Lower attrition would have been preferable however, and once again may mean that any findings cannot be generalised beyond the sample if attrition is non-random. The main cause of attrition for learners related to contact details. Over one in five (21 per cent) had either changed their number (change of number or no longer at their address) between sampling points. Thirteen per cent refused to participate or hung up on the interviewer. In addition, there was a high level of non-response from operational phones, typically mobiles (19 per cent) and a further seven per cent were unfilled appointments.

In terms of the level of apprenticeship, we can see that EOP apprentices are more likely to be at a higher level than the control group apprentices. Only one quarter of EOP apprenticeships are Intermediate, whereas half of the control group are at this level. At the other end of the scale, 18 per cent of EOP apprenticeships are Higher, as compared to only 4 per cent of the control group.

Of the 198 treatment group apprentices observed at SPB, 43 are from a single project and 40 from another. The next largest EOP participant group has 13 apprenticeships. Most projects have just a small handful of apprentices observed, with 9 projects having just 1 surveyed apprentice at SPB and 7 having none (at SPA, the second project report above had 146 surveyed apprentices, the first 131 and the third 99. Only 2 projects had no surveyed apprentices).

Further analysis is restricted to those learners who are observed at both SPA and SPB. We first turn to examine apprenticeship hours of training, on-the-job and off-the-job. Given the tendency for EOP apprenticeships to be at a higher level than in the control group, we additionally distinguish the level of apprenticeship in Table 11 (overleaf).

As can be seen, EOP apprentices receive more on-the-job and also more off-the-job hours of training per week on average. Part of this difference is simply because of the higher level of apprenticeship training amongst the EOP group which provide higher amounts of training time.

Table 11: Hours per Week of Apprenticeship Learning (per cent of apprentices)

	EOP							Control						
	0	<1	1-8	9-15	16-24	25+	DK	0	<1	1-8	9-15	16-24	25+	DK
On the job														
All	20.3	6.1	22.8	4.1	5.6	36.6	4.6	11.5	15.5	31.6	3.7	4.6	27.9	5.2
Inter	17.0	4.3	19.2	4.3	8.5	42.6	4.3	11.4	17.3	28.7	3.5	4.5	28.0	6.6
Advan	22.4	8.4	23.4	3.7	2.8	33.6	5.6	9.4	14.6	34.1	4.1	5.2	28.8	3.8
High	19.4	2.8	30.6	5.6	11.1	27.8	2.8	32.1	10.7	32.1	3.6	0.0	14.3	7.1
Off the job														
All	27.9	9.6	35.5	7.1	3.6	11.2	5.1	40.5	9.6	33.6	9.8	1.4	1.9	3.2
Inter	40.4	6.4	29.8	6.4	4.3	6.4	6.4	46.7	10.0	31.8	5.2	1.7	1.4	3.1
Advan	24.3	11.2	37.4	6.5	0.9	15.0	4.7	36.0	9.4	34.1	15.0	1.1	2.6	1.9
High	25.0	8.3	36.1	5.6	11.1	8.3	5.6	25.0	7.1	46.4	7.1	0.0	0.0	14.3

Note: Figures show the percentage of apprentices in each of the categories for hours of on-the-job and off-the-job training per week.

Table 12 considers the proportion of hours of training which are guided (i.e. under the direct supervision of a trainer). Overall differences here are small, and again driven by the fact that a greater proportion of EOP apprenticeships are at the Advanced and Higher level than in the control group, and these higher level apprenticeships receive fewer guided hours on average.

Table 12: Percentage of Learning Hours that are Guided

	EOP	Control
All apprentices	46.5	48.3
Intermediate apprentices	59.0	48.1
Advanced apprentices	41.7	49.4
Higher apprentices	37.3	38.5

Note: Guided learning hours are those under the supervision of a trainer.

As with the sample of employers, it is important to ascertain whether the follow-up sample at SPB is a random sample of those in the original sample at SPA, or whether there is evidence of non-random attrition. Table 13 reports the characteristics of the learners, distinguishing between those who drop out after SPA, and those who remain at follow-up SPB, separately for the EOP and control learner groups.

Table 13: Characteristics of Learners

	EOP			Control		
	Dropout after SPA	Remain to SPB	Diff	Dropout after SPA	Remain to SPB	Diff
Male	73.6	73.9	-0.3	37.7	42.3	-4.6*
Non-white	16.1	16.2	-0.1	16.5	12.7	3.8*
Age	32.2	35.1	-2.9**	31.6	29.8	1.8**
Current tenure	3.1	4.0	-0.9**	3.2	3.4	-0.2
Highest ac qual: degree	29.1	31.7	-2.6	23.9	15.7	8.1**
Highest ac qual: A level	33.3	37.1	-3.8	37.6	39.0	-1.4
Highest ac qual: O level	77.4	78.9	-1.5	73.3	75.9	-2.6
Has English GCSE	68.8	77.3	-8.5**	71.7	80.8	-9.2**
Has Maths GCSE	66.9	74.7	-7.7**	65.4	75.5	-10.1**
Prior status: full time emp.	65.2	70.7	-5.5**	55.6	53.3	2.3
Prior status: part time emp.	10.3	9.9	0.4	20.5	21.1	-0.6
Prior status: out of work	22.9	17.9	5.0**	21.0	24.6	-3.6
Total hours per week	36.4	37.6	-1.1	33.4	35.0	-1.6**
Not in work	9.0	5.6	3.3**	6.8	4.6	2.2
Managers	12.4	11.9	0.5	3.6	3.6	0.0
Professional	12.7	13.8	-1.1	5.8	5.9	-0.1
Ass Prof	16.3	20.5	-4.2*	15.8	17.9	-1.2
Administrative	7.2	7.4	-0.2	18.7	24.1	-5.4**
Skilled Manual	11.9	16.5	-4.6**	10.9	14.6	-3.7*
Services	4.9	6.7	-1.8	23.4	15.9	7.5**
Sales	4.0	5.2	-1.2	8.5	8.9	-0.4
Machine operatives	18.4	9.9	8.5**	2.4	1.8	0.6
Elementary occupations	3.2	2.5	0.7	4.1	3.6	0.5

Note: Difference between drop-out and remaining learners statistically significant at **1 per cent *5 per cent significance level.

We can see that sample attrition amongst the learners is not random (unlike the equivalent analysis for employers reported in Table 6 above). Amongst the EOP treatment group, older and better educated workers are more likely to remain in the sample, with further differences by gender and ethnicity amongst the control group. Note also the differences in the occupational distribution between EOP and control groups, and in particular the higher levels of managers and professionals in the treatment group. This is likely to reflect the dominance of responses from a particular project in the EOP group.

For the highest qualification, we are restricted to the SPA answers on academic qualifications in Table 13. These were imperfect as they did not ask for the *level* of vocational qualifications (rather, only the *type* of qualification - NVQ, BTEC etc. was requested). This was rectified at SPB by asking retrospective questions about initial qualifications. In all subsequent tables these SPB questions are used to provide the data on initial qualifications. In Table 13 however, which includes the drop-outs after SPA, we cannot do this, and so we are limited to academic qualifications only in this table.

We now turn to compare the outcome variables, namely hourly wages and annual income differences. Table 14 (overleaf) reports the raw differences for the unmatched samples of learners. As can be seen, nominal pay – both hourly and annual - increased between SPA and SPB for both EOP treatment and control groups for every level of apprenticeship, and thus in aggregate. The increase in wages and in annual income is greater amongst the EOP group for all apprenticeship levels, as evidenced by the positive difference-in-difference figures in every row of the final column. EOP apprentices were paid less than their control group equivalents before commencing their EOP training, but were paid more than them after completion of their EOP training at SPB. In aggregate, the difference in hourly wages, and in annual income, between EOP and control group workers at SPB is statistically significant. However, this is mainly a consequence of the greater proportion of EOP apprenticeships being at the Advanced and, especially, Higher level, who get paid more than those at the Intermediate level. However, there is also some evidence to suggest that annual income for EOP apprentices at Advanced level is higher than for their non-EOP counterparts.

Table 14: Raw Differences in Wage Variables

	Before (SPA)			After (SPB)			Diff in Diff
	EOP	Control	Diff	EOP	Control	Diff	
Hourly wages							
All apprentices	8.20	8.15	0.05	10.52	9.52	1.00*	0.95
Intermediate apprentices	5.35	7.30	-1.95**	8.84	8.54	0.30	2.25
Advanced apprentices	8.55	8.79	-0.25	10.36	10.28	0.08	0.33
Higher apprentices	9.63	10.67	-1.04	12.70	12.38	0.32	1.36
Annual income							
All apprentices	16,320	15,578	743	21,928	18,096	3,832**	3,089
Intermediate apprentices	10,573	13,418	-2,844*	18,019	15,870	2,149	4,993
Advanced apprentices	16,964	17,311	-346	22,083	19,791	2,292*	2,638
Higher apprentices	19,450	20,709	-1,258	25,163	24,585	578	1,836

Of course, the raw differences in pay in Table 14 do not take into account the other differences between EOP and control group apprentices which might also explain the differences in their pay. Thus we now turn to analysing matched treatment and control group apprenticeships using PSM. The results of the PSM balancing are reported in Annex Table A2. It proved more difficult to balance the treatment and control groups of learners than in the equivalent analysis for employers, and the mean bias is rather larger than desirable. The EOP group continue to have a lower proportion of associate professionals and higher proportion of skilled manual workers (the occupations we might most closely associate with ‘traditional apprenticeships’) after matching, compared to the control group. With this caveat in mind, Table 15 reports the differences in hourly wages and annual income between EOP and control groups using the PSM-matched apprentices.

Table 15: EOP Treatment Effects - Apprentices (Propensity Score Matching Results)

	Before			After		
	EOP	Control	Difference	EOP	Control	Difference
<i>Hourly wages</i>						
All apprentices	7.79	7.92	-0.13	10.11	10.22	-0.11
Advanced apprentices	8.50	8.57	-0.07	10.39	10.97	-0.58
<i>Annual income</i>						
All apprentices	15,563	15,042	521	21,025	18,288	2,737*
Advanced apprentices	18,157	16,580	1,577	22,128	26,481	-4,353

Notes: Matching variables are those included in Table 9. See Appendix Table A2 for balancing tests on these variables.

**Average treatment effect statistically significant at **1 per cent level * 5 per cent level. Standard errors in parentheses.

We can see that the aggregate raw difference in hourly wages in Table 14 is no longer statistically significant in the matched sample, and that the Advanced apprenticeship raw difference in annual income between treatment and control that was observed in Table 14 disappears once we use PSM to condition on differences in apprentice characteristics (in particular, prior qualifications and occupations). Note that Intermediate and Higher apprenticeships are not included in Table 15. The number of observations is simply insufficient to be able to perform PSM for these sub-groups, and in particular the small number of treated apprentices in these sub-groups.

Table 16: Difference-in-Differences Coefficients - Apprentices

	Unmatched	Matched
<i>Hourly wages</i>		
All apprentices	0.373 (0.479)	0.326 (0.827)
Advanced apprentices	-0.379 (0.741)	-0.522 (1.264)
<i>Annual income</i>		
All apprentices	2,460.1** (774.1)	2,712.8* (1389.7)
Advanced apprentices	1,385.9 (1242.8)	1,202.6 (2081.2)

Notes: Regression of change in wages on the treatment variable and the control variables listed in Table 23. Coefficient on treatment variable, measuring the difference-in-differences, reported.

Statistical significance at **1 per cent level * 5 per cent level shown. Standard errors in parentheses. Final column restricts the sample to matched observations only.

Table 16 reports the regression-adjusted D-i-D treatment effects for hourly wages and annual income. There is some (weak) evidence of a significantly larger increase in annual income across all EOP apprentices compared to all control group apprentices when using the matched data. But given the difficulties in balancing the matching, and that there are insufficient observations to undertake the analysis for Intermediate and Higher level apprentices, this finding should be treated with caution, not least because it is not apparent in the largest group of apprentices, namely those who have undertaken Advanced apprenticeship.

We now turn to consider non-QCF training. Our control group in this case is derived from the Labour Force Survey (LFS), and in particular from 7 waves of the LFS 5-quarter longitudinal sample (January-March 2014 to January-March 2015, April-June 2014 to April-June 2015 etc., up to July-September 2015 to July-September 2016). This time period roughly coincides with the EOP. We take individuals observed to be in training (defined as being in education or training connected to work in the 4 weeks prior to the survey) in wave 1 of their LFS responses, but not in training in wave 2. This ensures their wage observed in wave 5 is around 1 year after the training has finished, as in the EOP survey structure. Note that this does not imply that their training is necessarily short – they could have been in training for a while before first observed in wave 1. Note also that they may start another period of training in wave 3, but this option is also available to EOP learners. For our control group of trainees, the ‘before’ wage is their wave 1 wage while the ‘after’ wage is their wave 5 wage, so that the LFS control group wages are always 1 year apart.

The EOP treatment group comprises 255 individuals, and they are then matched to 658 individuals obtained from the LFS as described above. The results of the PSM balancing are reported in Annexe Table A3. It was easier to balance the matching for the LFS derived control than for the surveyed apprentices above, and the bias is within acceptable bounds for most variables and in aggregate.

Table 17 reports the findings from the matched analysis. There are no significant differences between EOP treatment and control outcomes as measured by hourly wages or annual income either before or after EOP. This is the case whether we consider all non-QCF learners (row 1 and row 5), or just those whose training was short (less than one week, row 2 and row 6) or those who received longer training period (greater than one month, row 3 and row 7). There is also no difference in earnings when the EOP sample is restricted to those whose surveys are less than 1.5 years apart, since EOP surveys are up to 3 years apart and so the learners would have had longer to increase their wages than the LFS control group sample.

In conclusion, there is no evidence to suggest that for non-QCF accredited training, there is any difference in the growth in hourly wages or in annual income for EOP participants as compared to their non-EOP counterparts.

Table 17: EOP Treatment Effects – Non-QCF-learners (Propensity Score Matching Results)

		Before			After		
		EOP	Control	Difference	EOP	Control	Difference
Hourly wages:							
1	All non-QCF-learners	12.96	14.33	-1.37 (0.94)	14.32	15.16	-0.85 (0.85)
2	Training duration<1 week	13.57	13.70	-0.14 (1.79)	14.09	15.87	-1.78 (1.61)
3	Training duration>1 month	12.87	12.75	0.11 (1.66)	14.56	14.11	0.45 (1.66)
4	EOP restricted to surveys<1.5 years apart	12.61	15.90	-3.28* (1.35)	13.89	14.99	-1.10 (1.13)
Annual income:							
5	All non-QCF-learners	26,982.9	27,182.4	-199.5 (1,613.0)	30,014.8	28,500.2	1,514.6 (1,689.3)
6	Training duration<1 week	2,9372.1	24,071.9	5,300.2 (3405.8)	27,439.1	28,659.2	-1,220.1 (3,103.8)
7	Training duration>1 month	3,0041.9	28,700.2	13,41.7 (4047.4)	33,597.2	30,703.7	2893.5 (3,559.3)
8	EOP restricted to surveys<1.5 years apart	2,5689.2	25,229.7	459.6 (2503.7)	29,162.9	29,366.1	-203.2 (2,248.4)

Notes: Control group taken from LFS. Matching variables are those included in Table 13, except for English and Maths GCSEs, and prior status (not available in LFS). See Annexe Table A3 for balancing tests on these variables.

****Average treatment effect statistically significant at **1 per cent level * 5 per cent level. Standard errors in parentheses.**

Conclusions

Employers' experience of the pilot

Through EOP Round One, 36 projects were commissioned which each covered a unique set of objectives. Projects varied greatly in the delivery models that were used, the types of activities that were undertaken and the challenges they were trying to overcome. The key challenges EOP projects were seeking to address centred on skills gaps of current or future employees, a lack of appropriate training for the sector, addressing future skills shortages and tackling equality and diversity in their sector.

Although EOP projects varied in design, there were similarities in how they were set-up and managed. Three broad categories were identified: single employer-led models where projects were run and managed by a single employer; multiple employer-led where a project was run and managed by a group of employers in partnership with one employer acting as the lead organisation; and finally intermediary-led where this was managed by an intermediary organisation. Employers contributed to their training either through cash or through in-kind investment.

Key activities undertaken by employers engaged in EOP projects were designing and developing new qualifications, engaging other organisations to support the delivery of training, expanding or updating current qualifications, developing work experience/pre-apprenticeship training and undertaking outreach activities. Examples were found in depth interviews of employers who saw no difference in the training accessed when compared to other training their learners had undertaken. In a minority of cases employers had been able to bolt on additional training elements (to these standard courses) through the EOP funding to improve the relevance to their business. Where tailored sector specific training was designed employers generally felt more in control through being able to specify course content enabling them to expand the knowledge a learner was receiving. These employers believed this approach had enabled them to develop a more suitable training programme that could accelerate the learning of their employees. A minority of employers felt this process has served them well in gearing up for the development of their respective apprenticeship trailblazers. In other cases, however, EOP provided the means (principally access to finance) to purchase already available training for their staff highlighting little innovation. Alongside this only half of all employers surveyed stated EOP training was better than training they did in the past for the same occupations.

Overall most employers had a positive experience on the pilot with three-quarters stating it was *very good* or *good*; the remainder classed their experience as *average*, *poor* or *very poor*. Around three-quarters of employers thought the pilot offered them value for money, the training met the needs of the organisation and the training providers delivering the project were responsive to our needs. Three-fifths of learners also reported they had learnt new skills as a result of the training they undertook

During depth interviews, employers said that developing a collaborative approach to a skills gap with other employers in their sector was a positive aspect of their involvement in EOP. It is interesting to note that issues of rivalry or competition were not raised by employers. Based on these interviews, within some projects EOP has seemed to have successfully provided a forum for businesses to cooperate towards a shared goal.

Employers were asked during the survey what their greatest challenge had been to date with the pilot. The findings remain unchanged from those reported early in the evaluation with the management of the pilot being the biggest challenge for employers. This ranged from some employers finding the administration and paperwork complicated and time-consuming to frustration with the inflexibility of the scheme.

Impact of the pilot

On employers

Due to the varied nature of the pilot projects the impacts that employers reported differed greatly in scale and type. There were examples of employers who thought that EOP had made no difference to their organisation, although most recognised some form of impact for them, their sector or their learners.

There is evidence that employers self-report an impact on their own and others' attitudes towards training. Examples of such changes include considering whether to recruiting additional apprentices, increased training budgets, continuation of training started through EOP and using apprenticeships as an additional pipeline for leadership positions. This was not the experience of all employers and the impact analysis shows that, after one year, EOP employers do not report higher levels of training compared to matched counterfactual groups when measured through: the proportion of employers delivering training; the average number of workers trained; and the average proportion of the workforce trained.

There is no evidence to suggest that EOP has changed attitudes towards training and led to subsequent increases in the number of staff trained. In part, this is due to the high levels of training already undertaken by EOP employers and the positive attitudes towards training they already held. Most employers were already invested in the skills development of staff and training, and these views have remained unchanged since the start of the pilot to one year after they completed. Employers referenced a number of difficulties which they faced regarding the sustainability of the training through EOP. These included a lack of funds or time to invest in training, or a lack of vacancies (to take on new apprentices). There are however examples of employers continuing with EOP training or continuing with specific programme elements such as qualifications developed through the pilot.

A group of employers reported productivity gains as a result of EOP training. Most learners also believed that the training they undertook had helped them to be better at their job. The upskilling of staff with sector specific skills has in some cases led to more efficient workers and the development of new ideas or products. There was a belief amongst some employers that the development of new qualifications that are targeted and more suited towards the needs of the sector would lead to a positive outcome for the sector as a whole.

In the case of employers, the data is strong enough to provide some evidence of no impact on the outcome variables considered. Many of the differences between treatment and control groups are very small, sometimes negative, and often smaller than the pre-treatment differences that existed. The data supports a conclusion of no impact in terms of the quantity of training as many of the participating employers trained extensively anyway, even before the treatment. This is not to say there is no impact from EOP on factors not covered in the survey such as training quality measures.

On learners

Around one-half of learners self-reported that the training they undertook had enabled them to advance in their career or in the company they currently work in. One-third of learners reported that they had changed role or moved to a new employer since the start of the pilot with around half of these stating this was a promotion. Over half of those who reported they had received a promotion or had moved into work (from unemployment) believed that undertaking their training through EOP had contributed to them gaining this role.

The econometric impact analysis which was undertaken to explore if taking part in EOP training compared to other workplace training however shows no impact on a learner's salary one year after completing the programme. The analysis compared EOP apprentices to apprentices in non-pilot firms, and also compared all non-QCF learners in EOP firms to a statistical comparison group of individuals observed in training in the Labour Force Survey. The treated learners are matched to comparison group learners with similar observed characteristics, and then the change in wages before and after learning are compared for the matched groups. The results of the analysis showed that although learners' salaries sometimes increased following the programme, the magnitude of the increase was no different to that experienced by other individuals on workplace training outside of EOP.

Unlike employers, the data is not strong enough to provide evidence of no impact, instead it would be more correct to say there is no evidence of impact. There are a couple of attributes in the data leading to this conclusion. Firstly, the treatment cohort of apprentices are dominated by two of the large employers which introduces some level of bias into the findings. Secondly, it was harder difficult to balance the matched treated and

control groups of learners in terms of observed characteristics compared to employers
i.e. the quality of the econometric matching was poorer.

Appendix 1: Employer characteristics SPB

Table 18: Employer characteristics by sector

	%
Wholesale and retail	19%
Manufacturing	19%
Construction	14%
Professional services	11%
Human health and social work	11%
Other	26%
Base	184

Table 19: Employer characteristics - where UK headquarters is based

	%
North West	22%
South East	19%
London	15%
South West	12%
East Midlands	8%
Yorkshire and the Humber	8%
West Midlands	6%
North East	6%
East of England	4%
Base	183

Table 20: Employer characteristics - company status at SPA

	%
Private for profit limited company	80%
Charity or Trust	5%
Private partnership, e.g., limited liability partnership	4%
Public listed company	3%
Public sector organisation	3%
Base	184

Table 21: Employer characteristics - company size at SPA

	%
Small	49%
Medium	33%
Large	18%
Base	176

Table 22: Employer characteristics - company turnover at SPB

	%
Under £0.5m	21%
£0.5m - £0.999m	9%
£1m - £1.999m	12%
£2m - £4.999m	15%
£5m - £9.999m	5%
£10m - £19.999m	2%
£20m - £49.999m	4%
£50m or more	9%
Don't know	19%
Refused	4%
Base	184

Appendix 2: Learner characteristics SPB

Table 23: Learner characteristics - gender

	%
Male	74%
Female	26%
Base	727

Table 24: Learner characteristics - ethnicity

	%
White British	84%
White Other	3%
Asian	4%
Black	3%
Mixed	2%
Other	1%
Unknown	4%
Base	727

Table 25: Learner characteristics - learning difficulty/disability or health problem

	%
Learner considers himself or herself to have a learning difficulty and/or disability and/or health problem	4%
Learner does not consider himself or herself to have a learning difficulty and/or disability and/or health problem	68%
No information provided by the learner	28%
Base	727

Table 26: Learner characteristics - age on starting EOP training

	%
Under 18	15%
19-23	17%
24 or older	68%
Base	727

Table 27: Learner characteristics - EOP training undertaken

	%
QCF only	8%
Apprenticeship	35%
Non QCF only	54%
Mix of QCF and Non QCF	2%
Base	727

Appendix 3: Econometric methods and result of Propensity Score Matching

Andy Dickerson, Steve McIntosh and Jennifer Roberts

Department of Economics, University of Sheffield

This section summarises the econometric methods used to assess impact and presents the outcome of the Propensity Score Matching undertaken on employers and learners.

Summary of methods

The analysis reported here utilises treatment (EOP) and control groups which are both observed at two points in time, before (baseline) and after (follow-up) the policy intervention. We summarise the methods here in relation to the employer analysis, and the equivalent analysis is also carried out for learners.

The impact of the EOP policy is then evaluated using a difference-in-differences (D-i-D) estimator. We provide descriptive statistics to explore the difference between the EOP and control groups at baseline and follow-up and then use a regression adjusted D-i-D estimator on matched outcomes to estimate the effect of the EOP intervention on three outcomes: the proportion of employers doing any training, the average number of workers trained, and the average proportion of the workforce trained.

EOP and control group employers are matched on observable characteristics, in order to make them as similar as possible³³. This matching process ensures that any remaining differences in outcomes are due to the EOP intervention rather than any difference in baseline characteristics between the two groups.

We use the method of ‘propensity score matching’ (PSM), which matches treatment and control group subjects according to a single variable; the propensity score. The propensity score is the predicted probability that any employer will be treated (i.e. be involved in the EOP programme). It is found by estimating a probit regression on the pooled sample of the treatment and control groups. The predicted probabilities from this regression then give the likelihood that that employer would be involved in EOP on the basis of their observable characteristics. Treatment group employers are then matched to control group employers who look like they *should* have engaged in EOP on the basis of their observable characteristics³⁴. The ‘balancing property’ of the propensity score

³³ The observable characteristics used for matching are those listed in Table 4.

³⁴ The propensity score can be used in a number of ways to identify the matches, including nearest neighbour, calliper and kernel density matching. We have explored all of these matching estimators and the results presented here are qualitatively robust to different types of matching.

matching is checked by testing the equality of each covariate mean between the treatment and control groups, within strata of the propensity score.

It should be stressed that PSM only controls for observed differences between the EOP and control group observations. Employers in the two groups could still differ systematically in terms of their unobserved characteristics. While minimising observed differences is likely to reduce unobservable differences, some unobserved differences between the two groups may still exist. If this is the case, then differences in outcomes could be caused by differences in unobserved characteristics, rather than being due to a treatment effect. Such effects would most likely bias the estimated treatment effect upwards, and so increase the chances of observing a significant treatment effect. The EOP firms were selected to participate in the scheme from amongst a set of applicants. They therefore had sufficient interest in training issues, and the commitment to workforce development, to apply to EOP in the first place, and then had the most attractive plans for their training in the views of the selectors, in order to be chosen to participate. To the extent that the observed variables do not pick up all of these characteristics in order to match them (hold them constant) between treatment and control groups, then the presence of such characteristics amongst the treated firms might be expected to increase their observed training. The fact that the analysis largely fails to find training effects of EOP, as reported below, is therefore unlikely to be due to the methodology used; if any biases are to be found within the analysis, they are likely to tend towards finding significant effects. For biases in the methodology to be causing an *absence* of significant effects, then the unobserved characteristics of treated firms would need to be associated with a *lower* aptitude for/commitment to training. While this is possible (firms applying to EOP to resolve a traditional weakness in the area of training, for example) this seems unlikely given the high levels of pre-treatment training observed in the results reported below.

To allow for any unobserved characteristics between treatment and control groups, the analysis is extended with the D-i-D method. The D-i-D analysis takes the matched EOP and control groups from the PSM analysis, and compares the change in outcomes before and after the policy intervention for the EOP group, to the change in outcomes before and after the policy period for the matched control group. The change in outcomes for the control group is therefore taken as an estimate of the counterfactual, i.e. the change in outcomes that would have occurred for the EOP group if they had not been 'treated'. The assumptions behind the method are that any differences in unobserved characteristics between the treatment and control group will be constant over time, and that any other factors that affect the outcome variable of interest will affect both groups equally. If these assumptions hold, then the method therefore isolates the effect of EOP on the outcome, over and above the change that would have occurred anyway. Thus, the D-i-D procedure provides an estimate of the additionality of the EOP policy.

Regression-adjusted D-i-D controls for any remaining differences in observed characteristics between the EOP and control groups. This aims to ensure that the change over time for the control group is as accurate an estimate as possible for what would have happened to the treated group in the absence of the treatment. The estimated equation is:

$$Y = \beta X + \gamma T + \delta EOP + \theta(T * EOP) + \varepsilon \quad (1)$$

where Y is the outcome variable of interest, X is a vector of observed characteristics, T is a time indicator showing pre- or post-programme, EOP is a treatment indicator for involvement in EOP, $T * EOP$ is an interaction between the time and treatment indicators, and ε is a disturbance term. The coefficient of interest is therefore θ which measures the difference in the change in the outcome variable between the EOP and control group, controlling for all other characteristics that influence the training outcomes.

Output from PSM for each audience

Table A1: Balancing Statistics for Propensity Score Matching on Employers

	EOP	Control	% bias	% reduction in bias	T-test for difference
Private sector	0.850	0.860	-2.3	92.6	-0.19
Number of employees	57.93	43.63	0.5	97.7	0.93
Prop workforce young	0.346	0.346	0.0	100.0	0.00
Prop workforce old	0.178	0.196	-4.5	82.7	-0.35
Prop workforce qualified Level 1	0.061	0.051	5.2	39.3	0.51
Prop workforce qualified Level 2	0.349	0.327	2.3	72.6	0.55
Prop workforce qualified Level 3	0.287	0.291	-1.3	92.7	-0.10
Prop workforce qualified Level 4	0.284	0.230	12.7	21.1	1.29
Staff development programme	0.626	0.636	-1.9	66.6	-0.14
Prop workforce left in last year	0.118	0.110	4.5	56.3	0.38
Has hard to fill vacancies	0.140	0.131	2.6	86.6	0.20
Workforce overstretched	0.262	0.252	2.1	78.4	0.16
Capital under-utilised	0.112	0.103	3.3	75.3	0.22
Influences training	0.467	0.458	1.9	68.8	0.14
Like to set skills agenda	0.617	0.664	-9.6	76.2	-0.71
Like to design own training	0.607	0.598	1.9	91.4	0.14
Like to collaborate with employers	0.664	0.673	-2.0	94.6	-0.14
Like to collaborate with providers	0.785	0.794	-2.1	95.1	-0.17
Think shortage of skills in sector	0.617	0.654	-7.6	76.5	-0.57
Construction	0.178	0.150	7.8	6.6	0.55
Wholesale & retail	0.215	0.168	11.9	-1.0	0.87
Education	0.037	0.065	-12.5	-67.6	-0.93
Health	0.093	0.140	-15.1	-232.3	-1.06
Other services	0.308	0.308	0.0	100.0	0.00

Notes: Treated and control columns show the mean values for each variable in the matched sample. The standardised % bias is the difference in the sample means between treated and control

groups, expressed as a percentage of the square root of the average of the sample variances in the treated and control groups.

% reduction in bias is the change in the standardised % bias after matching, expressed as a percentage of the bias in the unmatched sample.

T-test for difference is a test of significance of the difference in means between treated and control groups in the matched sample. **significant at 1%, *significant at 5%.

Sample	Pseudo R ²	LR chi ²	Mean bias
Unmatched	0.142	63.43**	18.9
Matched	0.048	14.19	4.8

Notes: Pseudo R2 is from the probit regression of the propensity score on the explanatory variables.

LR chi2 is the likelihood ratio test of the joint insignificance of the explanatory variables in the above regression.

Mean bias reports the mean standardised bias across all variables.

Table A2: Balancing Statistics for Propensity Score Matching on Learners (Apprentices)

	EOP	Control	%bias	% reduction in bias	T-test for difference
Male	0.636	0.576	12.5	75.7	0.87
Non-white	0.111	0.212	-31.3	-376.4	1.94
Age	24.13	26.77	-23.6	29.8	-1.82
Current tenure	2.162	2.576	-13.5	71.7	-0.99
Highest qual: Academic L5	0.051	0.020	11.6	65.7	1.15
Highest qual: Academic L4	0.020	0.000	9.2	64.0	1.42
Highest qual: Vocational L4	0.061	0.051	4.1	47.5	0.31
Has English GCSE	0.909	0.919	-3.1	90.4	-0.25
Has Maths GCSE	0.848	0.838	2.7	89.7	0.19
Prior status: part time emp.	0.131	0.101	8.0	70.5	0.66
Prior status: out of work	0.374	0.354	4.4	75.1	0.29
Total hours per week	37.88	38.35	-7.9	70.9	-0.59
Managers	0.061	0.071	-4.7	31.5	-0.29
Professional	0.111	0.091	6.5	76.6	0.47
Associate Professional	0.253	0.434	-43.0	-56.2	-2.73**
Administrative	0.121	0.111	2.6	93.9	0.22
Skilled Manual	0.253	0.141	29.3	-65.3	1.98*
Services	0.041	0.061	-7.4	80.6	-0.65
Sales	0.101	0.071	10.3	4.3	0.76
Machine operatives	0.051	0.020	15.2	32.0	1.15
Elementary occupations	0.010	0.000	7.3	57.1	1.00

Notes: Treated and control columns show the mean values for each variable in the matched sample. The standardised % bias is the difference in the sample means between treated and control groups, expressed as a percentage of the square root of the average of the sample variances in the treated and control groups.

% reduction in bias is the change in the standardised % bias after matching, expressed as a percentage of the bias in the unmatched sample.

T-test for difference is a test of significance of the difference in means between treated and control groups in the matched sample. **significant at 1%, *significant at 5%.

Sample	Pseudo R ²	LR chi ²	Mean bias
Unmatched	0.203	118.35**	26.1
Matched	0.070	19.00	12.3

Notes: Pseudo R2 is from the probit regression of the propensity score on the explanatory variables.

LR chi2 is the likelihood ratio test of the joint insignificance of the explanatory variables in the above regression.

Mean bias reports the mean standardised bias across all variables.

Table A3: Balancing Statistics for Propensity Score Matching on Non-QCF Learners

	EOP	Control	%bias	% reduction in bias	T-test for difference
Male	0.728	0.741	-2.7	94.6	-0.31
Non-white	0.096	0.113	-6.1	75.7	-0.60
Age	38.247	38.674	-3.6	94.2	-0.40
Current tenure: 1-2 years	0.167	0.184	-4.8	81.0	-0.48
Current tenure: 2-5 years	0.175	0.197	-5.7	11.4	-0.59
Current tenure: 5-10 years	0.218	0.238	-5.2	-17.0	-0.54
Current tenure: 10 years+	0.247	0.201	10.0	75.6	1.21
Highest qual: Academic L5	0.276	0.310	-7.3	55.9	-0.80
Highest qual: Academic L4	0.075	0.063	5.4	75.1	0.54
Total hours per week	39.67	40.50	-7.8	41.2	-0.93
Managers	0.151	0.130	5.7	42.9	0.66
Professional	0.126	0.151	-7.1	61.2	-0.79
Associate Professional	0.213	0.226	-3.1	72.5	-0.33
Administrative	0.084	0.084	0.0	100.0	0.00
Skilled Manual	0.130	0.126	1.4	94.3	0.14
Services	0.080	0.075	1.5	77.0	0.17
Sales	0.059	0.071	-5.8	52.2	-0.56
Machine operatives	0.109	0.092	6.3	78.6	0.61
Elementary occupations	0.050	0.046	1.8	81.7	0.21

Notes: Treated and control columns show the mean values for each variable in the matched sample. The standardised % bias is the difference in the sample means between treated and control groups, expressed as a percentage of the square root of the average of the sample variances in the treated and control groups.

% reduction in bias is the change in the standardised % bias after matching, expressed as a percentage of the bias in the unmatched sample.

T-test for difference is a test of significance of the difference in means between treated and control groups in the matched sample. **significant at 1%, *significant at 5%.

Sample	Pseudo R ²	LR chi ²	Mean bias
Unmatched	0.152	164.00**	21.7
Matched	0.010	6.81	4.8

Notes: Pseudo R² is from the probit regression of the propensity score on the explanatory variables.

LR chi² is the likelihood ratio test of the joint insignificance of the explanatory variables in the above regression.

Mean bias reports the mean standardised bias across all variables.



Department
for Education

© Department for Education

Reference: DFE-RR833

ISBN: 978-1-78105-920-3

This research was commissioned under the 2010 to 2015 Conservative and Liberal Democrat coalition government. As a result the content may not reflect current Government policy. The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

Any enquiries regarding this publication should be sent to us at:

www.education.gov.uk/contactus

This document is available for download at www.gov.uk/government/publications