The Measurement of Apprentice Pay

Interim Report for the Low Pay Commission (project no: 14/5)

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March 2014

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# Executive summary

The number of apprenticeships in the UK has been rising steadily in recent years, boosted by apprenticeships in non-traditional areas such as business and personal services. Prior to 2010, the National Minimum Wage (NMW) did not apply to those on formal apprenticeship schemes. This changed with the introduction of the NMW Apprentice Rate (AR); which specifies a minimum hourly wage for apprentices aged under 19, or in the first year of an apprenticeship; for all others, the NMW now applies.

Since the AR was introduced, non-compliance with the legal requirement seems to be extremely high – much more so than when the NMW itself was introduced in 1999. This information comes from the Apprentice Pay Survey (APS), a survey specifically sampling current apprentices.

The authors were commissioned to investigate the APS, particularly in respect of compliance. This interim report focuses on APS 2012 data for England, when overall 30% of apprentices appeared to be paid below their AR. The key finding of the report is that compliance is affected by pay period and training.

For the hourly paid, compliance is much lower, at around 20%; in fact, for those on the lowest AR of £2.65, non-compliance mainly results from apprentices claiming to be paid £2.50 or £2.60 an hour. Both may reflect the well-known tendency for employees to ‘round’ their reported earnings. The latter may also be an outcome of the survey design, or may reflect genuine wages being reported because of a lag in updating wages; the survey began data collection in October 2012, when the new AR had just come into force. This effect appears to drive the lower non-compliance rates reported for the 2011 APS.

The implication for the LPC is that improvements in the data collection may substantially reduce (but not eliminate) non-compliance amongst the hourly-paid.

For the non-hourly paid, compliance rates are much lower: as little as 40%-50% for those who should be paid at the Youth Development Rate or the adult rate of the NMW. As calculation of an hourly rate involves accurate data on hours (worked and in training) as well as earnings, there is more scope for error on the part of employers and employees, irrespective of any deliberate underpayment. A comparison of non-compliance amongst those with and without off-the-job training suggest that the hours calculation is important. In addition, regression analysis showed that non-compliance is associated with workers in the later stages of apprenticeships, when the base AR does not apply. Hence, an implication for the LPC might be that information about how to calculate apprentice wages is not being used appropriately.

The report has focused on the scope and potential of measurement problems in the APS. It also briefly studied other factors that influence compliance. Broadly, measures associated with more precarious working conditions (temporary job, no written contract, less time working with the employer, and so on) seem to be associated with non-compliance, as do some frameworks (industry-specific apprenticeship structures). However, these findings are based upon the raw data, without correcting for measurement.

The provisional recommendation for the LPC is that both the timing and design of the APS need some changes, but that that there is some residual cause for concern about non-compliance in certain types of jobs and industries.

Pending the delivery of the 2014 data, the project will complete analysis of the 2012 data allowing for measurement problems, and will revisit published findings from the 2011 APS. With the delivery of the 2014 APS, all findings will be reviewed for robustness and the impact of questionnaire design.

# Introduction

The National Minimum Wage (NMW) was introduced in the UK in 1999, with age-related minimum wages set every October since 2000. Employees on formal apprenticeships were exempt from the NMW legislation; instead many of the apprenticeship ‘frameworks’ had industry-wide, but not statutory, agreements on weekly wages for apprentices at different stages of their training.

In 2010 the UK government accepted recommendations from the Low Pay Commission (LPC) to introduce an Apprentice Rate (AR). The AR was introduced in October 2010, resulting in an overall increase in apprenticeships wages (Behling and Speckesser, 2013). The AR applies to those aged eighteen or under, or those over eighteen and in the first year of an apprenticeship. Table 1 shows the NMW rates since the introduction of the AR.

Table 1 National Minimum Wage rates 2010-2013

| **Rate from…** | **21 and over** | **18 to 20** | **Under 18** | **AR\*** |
| --- | --- | --- | --- | --- |
| October 2010 | £5.93 | £4.92 | £3.64 | £2.50 |
| October 2011 | £6.08 | £4.98 | £3.68 | £2.60 |
| October 2012 | £6.19 | £4.98 | £3.68 | £2.65 |
| October 2013(current rate) | £6.31 | £5.03 | £3.72 | £2.68 |

\*applies to those under 19 or in year 1 of Level 2/3 apprenticeships; otherwise NMW applies

The recommendation to introduce an apprentice rate was supported by quantitative and qualitative research commissioned and carried out by the LPC. To study the impact of the AR, a survey of employers of apprentices was carried out (see Higton, 2013, for a detailed analysis), and in 2010 the Department for Business, Innovation and Skills (BIS) began collecting quantitative data from apprentices via its Apprentice Pay Surveys (APS).

The authors were commissioned by the LPC to analyse the APS, particularly but not exclusively with respect to compliance with the AR. Previous studies (Higton and Colahan, 2013; Behling and Speckesser, 2013) have highlighted extremely high rates of non-compliance amongst apprentices.

This interim report studies the 2012 APS. It identifies a number of problems with the survey data, particularly for those who are not hourly paid.

Section 2 provides an overview of the impact of state intervention on UK apprenticeships, as well as background information regarding apprentice pay and the issues associated with researching this area. Four sectors representing traditional and non-traditional apprenticeships are presented as examples to highlight significant differences in UK apprenticeships, such as gender balance, age, working hours and training.

# Apprentices in the UK

## Apprenticeship development and structure

Apprenticeships compromise practical paid work experience and on- and off-the-job training which culminates in a nationally recognised qualification. As employees, apprentices earn as they learn and gain practical skills in the workplace (SFA, 2013). Responsibility for public funding of apprenticeships is shared between the Department for Business, Innovation and Skills (BIS), which funds adult apprenticeships, and the Department for Education (DfE), which funds apprenticeships for 16-18 year olds.

Apprenticeships are organised around industry-specific ‘frameworks’ which specify the length and content of the apprenticeship for that industry. Variations between the content and delivery of apprenticeships, frameworks, employer input and apprentice figures may be partly explained by differences in the institutional characteristics of educational systems and labour markets (see, for example, Ashton et al, 2000; Hall and Soskice, 2001; Rainbird, 1993; Steedman, 2010; Toner, 2008).

The face of apprenticeships has changed in recent years. Privatisation of former public sectors, such as construction, reduced the capacity of government to directly employ apprentices and there has been a shift within the content and delivery of apprenticeships as these are no longer regulated by employer institutions and trade unions and training has, instead, become more employer-led (Toner, 2008).

In the 1990s, the UK Government reformed the apprenticeship system in response to wider concerns about skills shortages, including the introduction of Modern Apprenticeships in 1995 and the Adult Learning Inspectorate (formerly the Training Standards Council) in 1998 (NPA, 2013). Apprenticeships were rebranded in 2004 with frameworks redefined in 2005 to provide updated guidance for (NPA, 2013). In 2009 the National Apprenticeship Service (NAS), was introduced in order encourage more employers to offer apprenticeships (NPA, 2013).

On 1st August 2011, the Specification of Apprenticeship Standards for England (SASE) was introduced in order to set out the minimum requirements for the number of guided learning hours (GLH) that form part of an Apprenticeship and Advanced Apprenticeship. Apprenticeships should, therefore, include a minimum of 280 GLH per year of which 100 must be delivered away from the workplace (Higton, 2013).

The number of apprenticeships in the UK has increased steadily since 2008, with 868,700 funded apprentices registered in the 2012/13 academic year, an increase of 7.7 per cent (SFA, 2103). Higton and Colahan (2013) suggest that a rise in the costs of higher education and the impact of recession has led to a resurgence of interest in apprenticeships amongst young people.

Sectors tend to be gender-dominated, with females choosing apprenticeships in tertiary sectors, including hairdressing and childcare and males taking up apprenticeships in traditional sectors, for example, mechanical engineering and construction. This has led to a marked gap in pay for male and female apprentices (Fuller et al, 2005). Similarly, there are differences across sectors in the age of apprentices. The regulation of sectors, for example, within child-care and early years, has limited opportunities for younger apprentices as employers are reluctant to take on under-18s. Hairdressing tends to be youth-dominated because training lasts six months and, as Drucker et al (2002) argue, the adult trainee rate could deter older applicants.

## Traditional Versus Non-Traditional Apprenticeships

Higton (2013) indicates that apprenticeship frameworks shape apprentice pay and working conditions. Apprentices enrolled on schemes with a focus on technical and/or practical manual skills such as engineering and construction, for example, experienced better working conditions than apprentices on frameworks focused on the service sector and/or transferable skills such as customer service and business administration (Higton, 2013).

This section provides a comparative overview of the variations in apprenticeships in two traditional sectors – engineering and electro-technical - and two non-traditional sectors – hairdressing and child-care - to highlight differences between the gender and age of apprentices, pay, working hours and training that are typical across the sectors where apprenticeships are offered.

### Hairdressing

The literature shows that hairdressing has consistently been the lowest paid sector. Apprentices in hairdressing are predominantly young women (Steedman 2008); hence this has contributed to the existence of a gender pay gap amongst apprentices (Ullman and Deakin 2005).

Ullman and Deakin (2005) reported that hairdressing apprentices were earning around two fifths of the skilled adult wage and, in 2012, 69 per cent were paid below the age-appropriate rates of minimum wage, which was an increase of 21 percentage points since 2011 (Higton, 2013). This indicates that pay levels in this sector are seeing a rapid level of decline. Steedman (2008) argued that there is lower demand for apprenticeships but indicated an existence of anecdotal evidence suggesting that applicants for hairdressing apprenticeships tend to be poorly qualified. This is backed up by Drucker et al (2002) who point to a decline in the calibre of applicants.

One important characteristic of this sector is that trainees receive tips. Almost a decade ago, Ullman and Deakin (2005) found that 75% of apprentices received tips averaging around £13 per week as part of their pay. Higton (2013) suggests that although, in general, apprentices are currently receiving fewer tips than in previous years, hairdressing apprentices (84%) continue to be tipped. Thus, although hairdressing continues to be the lowest paid sector, tips greatly add to apprentices’ take home pay (Ullman and Deakin 2005).

The introduction of the National Minimum Wage improved pay throughout the sector, especially for junior employees (Drucker et al, 2002). Drucker et al (2002) suggest that the National Minimum Wage is used by many salons to set the minimum level for commission rates. Nonetheless, Higton (2013) warns that, contrary to the National Minimum Wage legislation in 2009, the sector runs the risk of using tips to top up apprentices’ wages. What is interesting is that, compared to other sectors, apprentices in hairdressing demonstrated the highest awareness of the Apprentice Rate of the National Minimum Wage (67%) (Higton, 2013), suggesting that whilst these young women are aware that they are amongst the lowest paid workers in the UK, they continue to enter the profession.

Overtime work in this sector tends to be unpaid (Higton, 2013). Drucker et al (2002) found that most young people in this sector take second jobs to support themselves. This might explain why hairdressing apprentices have less time to engage in training. Apprentices in hairdressing also receive less off-the-job training than those in engineering and construction occupations. Ullman and Deakin (2005) reported that hairdressing apprentices received five hours off-the-job training per week. Drucker et al (2002) found that salons which had achieved Investors in People status were more likely to be better at supporting their employees. This might impact on apprentice experiences of pay and training.

### Engineering

Apprentices in the engineering sector are predominantly male. Apprenticeships appear to attract candidates because of the prospect of secure employment and higher wages in later life (Steedman, 2008). There are many applicants for apprentice places, which increases competition and attracts higher calibre young people and, as a result, most applicants are well-qualified (Steedman, 2008).

This is a well-paid sector for apprentices. Pay levels for apprentices in electro-technical and engineering occupations are comparable to a young person working full-time with no training in an unskilled occupation (Steedman, 2008). Net pay averages appear significantly greater because of the high proportion of trainees doing an Advanced Apprenticeship (Higton, 2013).

The sector offers good training opportunities; apprentices in the engineering sector received ten hours of off-the-job training when the average across all apprenticeships was five and a half hours per week (Higton, 2013). As with the electro-technical sector discussed below, training is more likely to be included in wage calculations where the transfer of high skills is part of the apprenticeship. Positive findings for apprenticeships in this sector correlate with wider literature on skills and remuneration within the sector (see for example, Appelbaum, 2000; Zenger, 1994).

### Electro-technical

This sector resembles the engineering sector in terms of gender and calibre of applicants and training (Steedman, 2008) and includes the highest earning apprentices at £160 per week (Higton, 2013).

Apprentices in the electro-technical sector receive a high proportion of training compared to other sectors. They spend only a third of their time working and the rest of the time is spent in on-the-job and off-the-job training (Ullman and Deakin, 2005). This would suggest that training is included in the calculations for employment hours.

### Children’s Care, Learning and Development

An apprenticeship in children’s care could lead to employment as a care worker, youth community worker, nursery nurse or teaching assistant. Apprentices in this sector are similar to those in hairdressing in terms of being predominantly female with low qualifications at the time of application for the apprenticeship. There are also similarities between the two sectors with regards to pay and training offered. As discussed previously, frameworks influence pay and conditions and childcare is typically seen as low-skilled, part-time and low-paid. There is lower demand for apprenticeships and Steedman (2008) points to anecdotal evidence suggesting that applicants for childcare apprenticeships tend to be poorly qualified. Having said this, Higton and Colahan (2013) reported that recession has led to an increase in women entering the labour market, creating a higher demand for child-care provision.

Apprentices in early years work are more likely to have previously worked for their employee prior to commencing the apprenticeship, yet, do not report any difference to pay received (Ullman and Deakin 2005). Ullman and Deakin (2005) explain their finding by suggesting that apprentices fail to see a connection between job and apprenticeship.

With 43 per cent of apprentices earning less than the minimum wage (Higton, 2013), apprentices in childcare were also one of the groups most likely to report that they received no pay (Ullman and Deakin 2005; Higton, 2013). Higton (2013), nonetheless, did not report that this figure had changed significantly since 2011 and was 7 per cent. Overtime work in this sector tends to be unpaid (Higton, 2013).

Apprentices in childcare receive little off-the-job training than other occupations, even hairdressing. Ullman and Deakin (2005) reported that childcare apprentices received only four hours off-the-job training per week.

## Apprentice pay reporting

Apprenticeship pay is calculated in a number of ways. Apprentices may receive their total pay either from their employer or from a training allowance; alternatively, pay can be a combination of a training allowance and employer pay (Higton, 2013). Research on apprentice pay reveals a number of issues including a concentration of low pay in certain sectors, rises in unpaid overtime and gender pay gaps (see, for example, Fuller et al, 2005).

Of more concern is the finding from studies carried out in 2011 and 2012 (Higton, 2013) that show a continued increase in the numbers earning below their entitlement under the national minimum wage. Research on apprenticeship pay has been affected by the fact that there seems to be a tradition of misreporting for apprentices, either by the employer or the apprentices themselves.

Higton and Colahan (2013) noted that some employers may be paying apprentices the incorrect amount due to error or ignorance of the legislation. Higton (2013) suggests that recent policy interventions may have resulted in mistakes; for example, changes to the GLH through the SASE in 2011 may have impacted upon the calculation of paid training hours. The findings themselves may also be misleading: changes to the AR rates in October 2012 may also have skewed the data on pay, collected towards the end of 2012, where employers and apprentices may have miscalculated based on 2011 pay rates (Higton, 2013).

## Apprentices and reported training

A significant trend appears to be reporting errors related to training hours. In the 2012 Apprentice Pay Survey, the finding that part-timers earn more than full-time apprentices has been explained by Higton (2013) by respondents being confused about whether or not training was included as part of contracted hours.

Confusion surrounding training might also explain why, in the 2012 pay survey, apprentices enrolled part-time were reported as earning more per hour. Higton (2013) has attempted to explain this phenomenon by suggesting this group failed to recognise at least some training as part of their “contracted hours”, or that this group under-estimated their hours/over-estimated their pay. In addition, differences in the length of time spent with an employer prior to the apprenticeship may have impacted on the figures for job training. Higton (2013) found that a statistically higher number of apprentices had worked for a year or more with their current employer in 2012 (66 per cent compared to 59 per cent in 2011). Consequently, it could be posited that these young people would need less training time than a new starter.

Women are less likely to report training (Higton, 2013); this might be explained by the types of sectors in which women apprentices tend be training. Over 21s are less likely to report on or off-the-job training (Higton, 2013); this suggests that length of time between leaving school and beginning an apprenticeship might have had an effect on how training is perceived and/or valued. This resonates with research done on apprentice completion rates; for example, Karmel and Oliver (2011) shows that apprenticeship success in Australia depends on the apprentice’s highest education level; they are on average beneficial if the apprentice has completed Year 10 or Year 12.

# The Apprentice Pay Survey

The APS was conducted in 2011 and 2012. A version was also run in 2007 (Fong and Phelps, 2008) but as it is substantially different in content and coverage, it is not considered part of the ongoing APS. Table 2 describes coverage of the 2011 and 2012 APS.

Table APS sample details

|  |  |  |
| --- | --- | --- |
|  | 2011 | 2012 |
| Data collection period | June 1st – July 31st 2011 | October 15th – December 23rd 2012 |
| Coverage | UK | England, Wales NI |
| Post-processing sample size | 6140 (England)2041 (Scotland)1997 (Wales)842 (NI) | 6507 (England)1817 (Wales)640 (NI) |
| Response rate | 51.9% GB7.9% NI | 45.2% (England)47.2% (Wales)5.9% (NI) |
| Relevant wage rate for data period |
| AR | £2.50 | £2.65 |
| 16-17 Year Old Rate | £3.64 | £3.68 |
| Youth Development Rate | £4.92 | £4.98 |
| Adult rate of the NMW | £5.93 | £6.19 |

NI data were collected by a postal questionnaire sent out to all apprentices in the province; hence the lower response rates. For the rest of the UK, data were collected via telephone interviews with the Individual Learning Records providing the sampling frame.

Note that the timing of the 2012 survey causes a problem. It is quite feasible that apprentices may be reporting earnings lower than the legal minimum because of lags in updating wages. Fry and Ritchie (2013) demonstrated that compliance increases through the NMW year, reaching a plateau of compliance around Spring.

This study focuses on the 5,507 English respondents from the 2012 APS who provide pay data. The decision to focus on England was made because of the homogenous educational support framework. Follow-up analysis will compare these findings with 2011 and 2014, when available.

Hourly wage rates are those calculated by the APS team (see Higton, 2013). For those who are not hourly paid, a wage rate is calculated by dividing the reported pay (weekly, monthly or yearly) by total hours (on the job plus on-the-job training and off-the-job training). Reported pay is generally gross earnings; some net earnings are reported but these are rare and do not affect the main findings.

APS cannot be triangulated directly by other surveys. The Labour Force Survey identifies apprentices and length of time with the current employer, but the definition of apprenticeship in LFS is not compatible with that in the APS. The Annual Survey of Hours and Earnings does collect pay data and has introduced a variable to identify apprentices; however, it does not identify the number of off-the-job training hours and it was only introduced in 2013.

# Compliance in the APS: an overview

Non-compliance may arise from two sources:

* genuine non-compliance by employers
* measurement problems

Genuine non-compliance is a source of policy concern. Non-compliance may arise because employers do not know the appropriate NMW for the employee’s age and time on the job; Higton (2013, p34) suggested this as a potential problem, citing the high number of non-compliant wages paid to apprentices over 17 and beyond their first year. Non-compliance may also occur because employers do not correctly calculate the NMW from the wage/hours combination; many apprentices are paid a weekly or monthly wage, rather than an hourly rate. Both of these would suggest an information need amongst employers. In addition, non-compliance may occur because employers actively try to avoid paying minimum wages; in the early years of the NMW non-compliance rates were substantially higher (see LPC reports). Finally, as noted above, non-compliance may arise as a result of delayed wage rises.

Measurement error in employee data collection has been well documented, in particular the preference for respondents to round continuous variables up or down (Fry and Ritchie, 2013; Ritchie et al, 2014; LPC, 2014). The most likely source of error is in the wage reported by the employee; however, the survey questions relating to hours are ambiguous, which may lead to an incorrect wage rate being calculated.

This section takes a broad overview of non-compliance by looking at the factors associated with the probability of being paid below the appropriate minimum wage for his or her age and/or year of training. This will pave the way for the analysis in the following sections of the report which will look at measurement issues in the calculation of hourly pay, distinguishing these from issues that can be thought of as indicating “genuine” non-compliance.

Non-compliance is defined as the hourly rate calculated by the APS team being below the legal minimum for each apprentice based on age and year of apprenticeship. Table 3 reports the extent of this non-compliance; see Higton (2013, figure 2.8) for a breakdown by framework.

Table 3 Non-compliance in the APS 2012 (England)

|  |  |
| --- | --- |
|  | % of apprentices earningbelow their legal minimum |
| Full sample (*N*=5,570) | 29.4% |
| Not hourly paid (*N*=3,790) | 33.5% |
| Hourly paid (*N*=1,780) | 20.7% |
| Note: Weighted data |

It can be seen that there is almost 13 percentage points difference in non-compliance between individuals that report an hourly pay rate and individuals that do not. Since non-compliance is calculated by a derived hourly rate for apprentices that report a weekly, monthly or yearly wage, this is a first indicator of either measurement problems or error on the part of employers. Even so, the 21% rate that is observed for hourly paid workers is still substantial and a reason for practical concern.

To analyse the relative importance of factors, the probability of non-compliance was regressed on a range of relevant covariates (basic demographics, age and year of course, and various contract and job characteristics). Three different specifications were analysed:

* full sample, without controls for the apprenticeship framework
* full sample, including controls for the apprenticeship framework
* hourly paid apprentices only, including controls for the apprenticeship framework

The first two specifications check the importance of the apprenticeship framework in explaining part of the findings. The third specification results from the assumption that hourly paid workers are less likely to be affected by measurement error arising from the need to calculate an hourly wage rate; hence, non-compliance should be a cleaner finding. Table 4 presents results; see Annex A for the full table.

Table 4 Correlates with the probability of non-compliance, APS 2012

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1. No framework | 2. With framework | 3. Hourly paid only |
| *Personal characteristics* |  |  |  |  |  |  |
| Male | -0.091 | \*\*\* | -0.017 |  | -0.008 |  |
| White | -0.035 |  | -0.019 |  | 0.031 |  |
| Disabled | 0.019 |  | 0.009 |  | 0.034 |  |
| NVQ Level 2 | 0.063 | \*\*\* | 0.058 | \*\*\* | 0.039 | \*\*\* |
| Aware of AR | 0.031 | \*\*\* | 0.027 | \*\*\* | 0.011 |  |
| Holding second job | 0.110 | \*\*\* | 0.101 | \*\*\* | 0.018 |  |
|  |  |  |  |  |  |  |
| *Age (default=16-18, first year)* |  |  |  |  |  |  |
| Age 16-18, Year 2 or above | 0.009 |  | 0.003 |  | -0.027 |  |
| Age 19-20, Year 1 | -0.060 | \*\*\* | -0.055 | \*\*\* | -0.016 |  |
| Age 19-20, Year 2 or above | 0.144 | \*\*\* | 0.171 | \*\*\* | 0.091 | \*\* |
| Age 21+, Year 1 | -0.194 | \*\*\* | -0.159 | \*\*\* | -0.079 | \*\*\* |
| Age 21+, Year 2 or above | 0.192 | \*\*\* | 0.238 | \*\*\* | 0.197 | \*\*\* |
|  |  |  |  |  |  |  |
| *Employment characteristics* |  |  |  |  |  |  |
| Worked for employer 0-12 months | -0.039 | \*\*\* | -0.043 | \*\*\* | -0.042 | \*\*\* |
| Worked for employer over 12 months | -0.140 | \*\*\* | -0.129 | \*\*\* | -0.134 | \*\*\* |
| No written contract | 0.061 | \*\*\* | 0.054 | \*\*\* | 0.038 | \* |
| Permanent job | -0.103 | \*\*\* | -0.093 | \*\*\* | -0.085 | \*\*\* |
| Working hours | 0.005 | \*\*\* | 0.005 | \*\*\* | 0.000 |  |
| Off-the-job training (incidence) | 0.050 | \*\*\* | 0.039 | \*\*\* | -0.008 |  |
| Overtime (incidence) | -0.041 | \*\*\* | -0.034 | \*\*\* | -0.022 | \* |
| Hourly paid | -0.067 | \*\*\* | -0.058 | \*\*\* |  |  |
| Receives any tips | 0.099 | \*\*\* | 0.024 |  | 0.004 |  |
| Receives any bonuses | -0.016 |  | 0.005 |  | 0.025 |  |
|  |  |  |  |  |  |  |
| *Framework (default = ‘other’)* |  |  |  |  |  |  |
| Customer service |  |  | -0.046 | \*\* | -0.027 |  |
| Business administration |  |  | -0.052 | \*\*\* | -0.013 |  |
| Retail |  |  | -0.055 | \*\*\* | -0.056 | \*\*\* |
| Health and social care |  |  | -0.069 | \*\*\* | -0.062 | \*\*\* |
| Engineering |  |  | -0.108 | \*\*\* | -0.058 | \*\*\* |
| Children's care, learning and development |  |  | 0.076 | \*\*\* | 0.029 |  |
| Hospitality and catering |  |  | -0.055 | \*\*\* | -0.039 | \*\* |
| Hairdressing |  |  | 0.099 | \*\*\* | 0.028 |  |
| Construction |  |  | -0.063 | \*\*\* | -0.044 | \*\*\* |
| Team leadership and management |  |  | -0.126 | \*\*\* | -0.054 | \*\*\* |
| Electro-technical |  |  | -0.084 | \*\*\* | -0.065 | \*\*\* |
| Notes: Probit models; table reports marginal effects calculated at the means of independent variables. \*\*\* p<0.01 \*\* p<0.05 \* p<0.1 |

The findings can be summarised:

1. Inclusion of framework in the model is important since the framework dummies are jointly highly significant, adding to the explanatory power of the regression. It seems that the hairdressing and children’s care frameworks are the ones where the highest probabilities of non-compliance are observed, ceteris paribus. The importance of these sectors should be further shown by reference to qualitative evidence. The policy implications of a better understanding of the reality of apprenticeship work in these sectors are obvious.
2. Demographic variables are not related to non-compliance. The negative male coefficient in specification 1 is largely the result of the over-representation of women (more than 90%) in the two major “non-complying” industries: hairdressing and children’s care.
3. The only other variable that is substantially affected by the inclusion of framework dummies is the tips’ receipt (compare columns 1 and 2). Tipping by customers is prevalent in the hairdressing sector, where around 84% of apprentices claim that they receive tips (compared with an overall prevalence among apprentices of around 10%). All other estimated coefficients and marginal effects are hardly affected by the framework dummies.
4. The interaction of age with year of apprenticeship produces some interesting results. Apprentices in the first year of their training are legally entitled to the AR (i.e. £2.65 per hour), irrespective of age. The results indicate that, for apprentices in their first year, non-compliance is significantly higher among younger people (i.e. 16-18 years old), ceteris paribus. On the other hand, for apprentices in their second year or above, non-compliance increases with age, pointing to a higher probability of non-compliance when higher minimum rates have to be paid. Some of these differences in probabilities are substantial: for example, compared with a person aged 16-18 in his/her first year (legal minimum 2.65), a person over 21 years of age in his/her second year of apprenticeship or above (legal minimum 6.19) has an almost 24 percentage points higher probability of earning below his/her legal minimum (specification 2).
5. Whether working or not with the same employer before taking up the apprenticeship also matters for the extent of non-compliance. The probability of non-compliance also decreases with tenure with the same employer, while it is highest among persons that started working with their employer for the purposes of the apprenticeship course.
6. Working hours and off-the-job training are positively related to non-compliance. These two variables are used for the calculation of hourly pay and, thus, non-compliance, for the persons in the sample that do not report an hourly pay rate. Over-reporting in these two variables relative to earnings can lead to a downward bias in estimated hourly pay. The results point to such a mechanism. This is strengthened by another important finding: when the estimating sample is restricted to those reporting an hourly pay rate, the two hours variables’ coefficients (and marginal effects) collapse to zero. The subsequent sections will concentrate on the investigation of such measurement issues.
7. The hourly pay variable in the first two specifications shows that people that report an hourly pay rate are less likely to receive a wage that is below the legal minimum. Specification 3 focuses specifically on those people, as a first way to “clear” our data from measurement errors in hours reported (see note 6 above as well). Most variables seem to behave similarly in specification 3 when compared to specifications 1 and 2. Having a contract or a permanent job is still negatively related to non-compliance and the same can be said about the rest of the variables discussed above.
8. Exceptions are the “awareness” and “holding a second job” variables which lose significance and decline substantially in importance once the sample is restricted to hourly paid apprentices only. Considering the obvious endogeneity of these two variables, a further examination of this finding is required.

# The distribution of pay data

Ritchie et al (2014) noted that employee surveys are likely to report rounded figures for wages; in some cases these reflect rounded wage payments made by employers, but in other cases this results from measurement error by the respondent. This tendency to round is common across all reporting periods; for example, hourly wages might be rounded to £6.00 an hour, weekly wages to £200 per week, annual salaries to £15,000 p.a. This section considers how the APS data reflects this.

The figures below plot wage distributions in the APS 2012 for England for different pay periods, depending on how the person is paid; that is, the hourly–paid distribution only includes those who say they are paid an hourly wage rate. Each column has at least three observations at that wage level. Distributions have been truncated at the top for clarity.

Figure 1 Distribution of wages for the hourly paid (N=1,042), APS 2012



Figure 1 plots the frequencies of reported hourly earnings less than or equal to £6.50 per hour for simplicity. It is important to note the spikes at “sensible” hourly pay rates (acting as “focal points”): £4.00, £6.00, £6.50, etc. There are spikes at the minimum age for this period (£2.65, £4.98, £6.19) as well as at the previous year’s NMW (£2.60, £4.98 and £6.08).

The very high frequency at £2.60 is of interest. It is the AR for the previous year, and so might genuinely reflect delays in the AR feeding into wages. However, it is also the lowest value that the APS interviewer was not obliged to check. If a respondent reported a wage under £2.60 (for example, the popular £2.50) the interviewer is supposed to check that the value is correct; but £2.60 would not be checked.

Note that in 2011 the check value was £2.50, which was also the AR, as well as being a popular focal point. This may explain why Higton et al (2012) found less non-compliance in the 2011 data; their finding (figure 2.9, p30) that almost 10% of respondents earn below £2.50 an hour is almost entirely accounted for by the non-hourly paid.

Unfortunately, it is impossible to identify whether the £2.60 spike reflects the impact of APS checking or genuine response. This strongly suggests that in future the APS interview routing should not allow values below the NMW to go through without checking.

The £2.50 responses should, according to the APS routing guidance, have been checked by the interviewer. The respondent is therefore convinced that he or she is receiving £2.50 an hour, which may be a better indicator of the level of non-compliance.

To delve more deeply into this, we also compared two groups of hourly paid employees in terms of their awareness of the existence of an AR: those that report hourly pay of £2.60 and those that report £2.65 (which is the lowest legal minimum). It seems that while 72% of the former group is aware of the AR, this percentage rises to almost 82% for the latter. This difference is significant at the 10% level as judged by a one-tailed test that the former group has a lower sample mean for awareness (note here that the number of observations is quite small to enable more statistical precision). There is, thus, some evidence that non-compliance may be increased by lack of awareness of the AR (remember, though, the opposite result in Table 2).

The importance of “focal points” is better illustrated in a simple graph for hourly paid employees like the one in Figure 2. Here, this shows the distribution of reported hourly pay for apprentices that should be paid greater than or equal to £4.98 per hour (i.e. persons 19-20 years old, in their second year or more of the course), restricting attention to earnings between £4 and £6. Two peaks can be observed: one that corresponds to the legal minimum (£4.98) and one that corresponds to the closest round number (£5). Spikes at “sensible” rates (e.g. £4.5, £5.5 etc.) can also be observed in the figure.

Figure 2 The importance of focal points - an example



The same picture emerges by looking at the weekly or monthly pay distributions; see Figures 3 and 4.

Figure 3 Distribution of wages for the weekly paid (N=1,315), APS 2012



Figure 4 Distribution of wages for the monthly paid (N=1,205), APS 2012

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For the weekly paid, the distribution is dominated by payments at £100 and £50 increments thereafter; monthly wages are concentrated on £400 and then in £100 increments, with spikes at £600, £800 and £1,000. It could be argued that these reflect the fact that, prior to the AR, the norm for apprentice pay in each framework was specified in terms of a weekly earnings. However, the pattern of Figures 3 and 4 is repeated when the respective distributions are plotted by framework (always reflecting, of course, the differences in average pay between them); hence this pattern does not seem to be driven by historical factors.

# Non-compliance and the hours effect

In this section, we first present some tables with some examples of calculated hourly rates in the APS 2012 that are counted as “non-compliance” cases. Our aim is to show that the calculated measure of hourly pay that is derived from the reported data on earnings (hourly, weekly, monthly or yearly) and hours of work plus any off-the-job training, depends on the reporting accuracy of these underlying variables.

Table 5 looks at a spike in the derived hourly pay distribution: £2.22, a value that is found 17 times in the data. No person that reported an hourly pay rate actually reported this value (see also Figure 1 above). It can be seen that the value of £2.22 is mainly the outcome of two combinations of weekly pay and total hours (work and off-the-job training): £80 for 36 weekly hours or £100 for 45 hours.

Table 5 Distribution of apprentices earning £2.22 per hour, APS 2012

|  |  |  |
| --- | --- | --- |
|  | Observations | %  |
| Paid hourly £2.22 | 0 | - |
| Paid weekly £80, 36 hours per week (work + training) | 4 | 24% |
| Paid weekly £100, 45 hours per week (work + training) | 5 | 29% |
| Other cases | 8 | 47% |
| **Total** | **17** | **100%** |

A different picture is observed for a major spike in the derived hourly pay distribution, the one that corresponds to the value of £2.50 (Table 6; see also Figure 1). Here, a substantial proportion of those earning £2.50 are paid by the hour, something that points to possibly *genuine* non-compliance.

Table 6 Distribution of apprentices earning £2.50 per hour, APS 2012

|  |  |  |
| --- | --- | --- |
|  | Observations | %  |
| Paid hourly £2.50 | 41 | 36% |
| Paid weekly £100, 40 hours per week (work + training) | 39 | 34% |
| Other cases | 35 | 30% |
| **Total** | **115** | **100%** |

On the other hand, a similar proportion is weekly paid with a wage of £100 for 40 hours of work and off-the-job training. These latter two values may correspond to “sensible” reference points in terms of reported earnings and hours, while their inclusion in the genuine “non-compliance” cases is more debatable. A further investigation of these weekly paid cases, revealed an interesting finding: the vast majority of these £100/40-hours apprentices report no off-the-job training (26 cases). So, these people actually report working 40 hours per week. In order for them to be compliant with the AR, a weekly gross pay of £106 should have been reported instead of £100 that was reported (or 37 hours instead of 40). The difference can be plausibly considered as a result of rounding.

Table 7 focuses on the group of apprentices that, based on their age and year of course, should be paid a minimum of £6.19 per hour. We have 10 observations for these apprentices with an hourly rate of £6.00. The vast majority of them report this as their hourly pay. Note here that the previous NMW for this group was £6.08 (in place until the beginning of October 2012), so it cannot be the case that these observations are due to the timing of the survey. Again, this may point to *genuine* non-compliance or reference to a “sensible” rate by employees.

Table 7 Distribution of apprentices (lawful NMW £6.19) earning £6.00 per hour, APS 2012

|  |  |  |
| --- | --- | --- |
|  | Observations | %  |
| Paid hourly £6.00 | 8 | 80% |
| Other cases | 2 | 20% |
| **Total** | **10** | **100%** |

Table 8 presents data on hourly pay for each of the three groups of apprentices in our dataset (those who have £2.65, £4.98 or £6.19 as the legal minimum), portrayed for total sample, and hourly-paid/non hourly paid separately; the hourly payment for this latter group is a derived payment. For each group, the table shows numbers receiving one of the other minimum wages, another value higher than the legal minimum or a value lower than the minimum. Thus for example, 1.7% of individuals whose relevant NMW is £2.65 actually receive £4.98. Those receiving the 16-17 Year Old Rate (£3.68) are excluded as there are negligible numbers in the data.

Table 8 Distribution of hourly pay by alternative NMWs, APS 2012

|  |  |
| --- | --- |
| *Relevant NMW* | ***Actual hourly pay*** |
| ***£2.65*** | ***£4.98*** | ***£6.19*** | ***Other (legal)*** | ***Other (illegal)*** | ***Number*** |
| **All respondents** |
| *£2.65* | 1.6% | 1.0% | 1.7% | 78.0% | 17.6% | **4,299** |
| *£4.98* | 0.0% | 2.3% | 0.0% | 50.4% | 47.3% | **567** |
| *£6.19* | 0.0% | 0.0% | 2.3% | 61.8% | 36.0% | **709** |
| **Hourly-paid only** |
| *£2.65* | 4.3% | 3.0% | 5.2% | 75.5% | 12.0% | **1,378** |
| *£4.98* | 0.0% | 7.6% | 0.0% | 63.5% | 28.8% | **172** |
| *£6.19* | 0.0% | 0.0% | 6.0% | 71.6% | 22.4% | **232** |
| **Non-hourly-paid** |
| *£2.65* | 0.4% | 0.1% | 0.1% | 79.2% | 20.3% | **2,921** |
| *£4.98* | 0.0% | 0.0% | 0.0% | 44.8% | 55.2% | **395** |
| *£6.19* | 0.0% | 0.0% | 0.0% | 57.3% | 42.7% | **477** |
| Notes: each cell shows the number of observations and the percentage with respect to the total (row percentages, in parentheses). Percentages are rounded to the first decimal point. Cells with two or fewer observations set to zero |

As discussed in the previous section, there is substantially less non-compliance for the people that report an hourly pay rate. The hourly-paid are also far more likely than the rest of the respondents to be paid the exact legal minimum, or any of the other exact legal minimum rates (which are always higher). For example, 8.2% of the hourly paid employees that are entitled to a minimum of £2.65, report an hourly rate of either £4.98 or £6.19. The same percentage for non-hourly paid employees in the same group is a miniscule 0.2%.

The same picture can be seen by constructing “blobograms” of the distributions of derived hourly rates for hourly paid and non-hourly paid apprentices; see Figures 5 and 6.

Figure 5 Distribution of measured hourly pay by legal minimum – hourly paid, APS 2012



Notes: size of bubble indicates number of observations at that wage rate. Only wages with two or more respondents reported

Figure 6 Distribution of measured hourly pay by legal minimum – non hourly paid, APS 2012

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Notes: size of bubble indicates number of observations at that wage rate. Only wages with two or more respondents reported

A substantially larger dispersion can be observed for non-hourly-paid apprentices and more so for those that are entitled to the two highest legal minimums. The blue line represents the lower legal limit; it is clear that the non-hourly paid have a much more variation in both legal and illegal wages.

It is notable, that amongst the hourly paid, only 12% of those with a legal minimum rate of £2.65 receive less than that; as can be seen from Figure 1, this is almost entirely accounted for by reported wages at £2.60 and £2.50. Hence for the hourly paid, non-compliance appears to be a result of rounding, questionnaire design, and timing. For the non-hourly paid, given the clustering in total earnings shown in Figures 3 and 4, the wide distribution of earnings is likely to be a result of the earnings/hours calculation.

# The role of training

It was noted in the literature review that the calculation of training is important to the measurement of apprentice pay. This is complicated by the need to account for both on-the-job and off-the-job training. Legally, apprentices should be paid both for the hours they are working and the hours they spent on off-the-job training. Formally, the relevant wage calculation for the non-hourly paid is:

$$hourly wage=\frac{total earnings}{\left(hours on the job+ hours off the job\right)}$$

## Off-the-job training

A number of scenarios could occur depending on whether employers and employees both include off-the-job training in their calculation. For the hourly paid, the assumption must be that the wage is reported accurately, but that the wage could be too low if the employer does not pay the employee for off-the-job training. For the non-hourly paid, the situation is more complicated; see Table 9.

Table 9 Impact of including off-the-job training hours in wage calculations

|  |  |
| --- | --- |
|  | **Employer includes off-the-job training hours in earnings?** |
| **Yes** | **No** |
| **Employee reports off-the-job hours?** | **Yes** | Hourly wage calculated and reported accurately | Hourly wage underpaid and underreported |
| **No** | Hourly wage calculated accurately but over-reported | Hourly wage underpaid but reported accurately |

The probability regression showed that non-compliance is associated with off-the-job training. This may be the result of a practice where off-the-job training is not paid appropriately. Alternatively, we cannot exclude the possibility that apprentices in the survey over-report their off-the-job training hours (something that leads to lower calculated hourly pay for people that do not report an hourly rate).

Table 10 tries to shed some light on this issue.

Table 10 Extent of non-compliance, by pay period and amount of off-the-job training, APS 2012

|  |  |
| --- | --- |
|  | % of apprentices earning below their legal minimum |
| Full sample (*N*=5,570) | 29.4% |
| Not hourly paid (*N*=3,790) | 33.5% |
| Hourly paid (*N*=1,780) | 20.7% |
| No off-the-job training (*N*=2,859) | 26.1% |
| Not hourly paid, with off-the-job training (*N*=1,879) | 37.9% |
| Not hourly paid, no off-the-job training (*N*=1,894) | 29.5% |
| Notes: Weighted data; the number of observations differs because of missing cases in the off-the-job training question |

The first three rows replicate the rows in Table 3, where the substantial divergence in the extent of non-compliance between hourly and non-hourly paid apprentices is observed. The fourth row reports the non-compliance percentage for people that report zero hours of off-the-job training. The rationale here is to see if there is a substantial change in the estimated percentage, compared with the full sample in row 1. While for the full sample of apprentices, non-compliance stands at 29.4%, when we exclude people that undertake off-the-job training as part of their apprenticeship, non-compliance falls to 26.1%. However, this reduction is not as large as the one observed when we restrict the sample to hourly paid employees (reduction to 20.7%).

Hence, it seems that the amount of working hours reported and which is used for the calculation of hourly pay for non-hourly paid individuals is more important than the issue of the inclusion of off-the-job-training in the hourly pay calculation. This can also be shown by a different finding: if we use a different hourly pay measure that is available in the APS, one that was derived by not including off-the-job training hours in the denominator, the non-compliance with that new measure is 27.5%; i.e. not that much lower than the 29.4% observed with the “correct” calculation.

The last two lines concentrate on persons that are not paid by the hour, since it is for these people that an hourly rate is derived taking also into consideration their off-the-job training hours. We can see that the extent of non-compliance is much more likely when off-the-job training is part of the course among this group of apprentices in our sample. Again, however, it seems that non-compliance is a much more general issue and cannot be adequately and simply explained by an over-reporting or improper remuneration of off-the-job training hours.

## On-the-job training

 A different examination concerns *on-the-job* training. In the survey, on-the-job training is implicitly included in working hours and it is much more prevalent among apprentices than off-the-job training. Of course, since this is a part of working hours, it should be remunerated accordingly. However, it could be interesting to examine non-compliance among people that are not offered any on-the-job training and compare it with non-compliance observed for people that are offered some. Table 10 shows the relevant numbers.

Table 11 Extent of non-compliance, by pay period and amount of on-the-job training, APS 2012

|  |  |
| --- | --- |
|  | % of apprentices earning below their legal minimum |
| Full sample (*N*=5,570) | 29.4% |
| With on-the-job training (*N*=4,103) | 32.7% |
| No on-the-job training (*N*=1,467) | 21.2% |
| Notes: Weighted data. |

It is interesting to note that the difference in non-compliance between apprentices that do and those that do not undertake any on-the-job training is similar to the difference between the hourly paid and the non-hourly paid reported in Table 3 above. This finding raises the following question: although on-the-job training should be reported as working hours by apprentices, do employers consider it as part of the hours that should be paid?

Perhaps more importantly, do employees include it in their hours? Although the most obvious interpretation of the APS question on office time is that it does include both work and on-the job training (and this is what the hourly wage calculations assume), it is not entirely unambiguous. It is possible to envisage an apprentice who has clearly-defined periods of on-the-job training omitting this from the reported work hours – particularly if the employer has indicated that not all on-the-job hours are paid for.

From the above, it becomes clear that it is very difficult to have an accurate picture of *genuine* non-compliance among the non-hourly-paid apprentices. The most accurate group is probably that with no off- or on-the-job training. Compared to non-compliance across the full sample of the non-hourly-paid (33.5%, see Table 8), we estimate a 25.4% probability of non-compliance for this restricted sample of apprentices that are not paid by the hour.

However, it should be noted that the questions in the APS are not exactly clear on how the interviewed apprentices should interpret working hours, on-the-job training and off-the-job training and what exactly the distinctions between them are. This in turn should affect the reporting of hours by apprentices and, thus, the hourly pay and non-compliance estimates.

# Summary

 Due to the fact that the hourly rate is a derived rate for apprentices in the sample that do not report an hourly wage, the most accurate source of information about the extent and the determinants of *genuine* non-compliance is the sub-sample of hourly paid apprentices. For this sub-sample, we estimate an approximately 21% probability of non-compliance; always keep in mind, however, the problem with the timing of the interviews. Some of the results reported in column 3 of Table 4 also point to *genuine* non-compliance. The non-compliance probability is higher for people with no written or a temporary contract, shorter tenure with their employer and those that are younger and in their first year of the course; while it is also higher when the higher AR minimums have to be paid for older people in the second year or more.

Lots of apprentices, either hourly or non-hourly paid, seem to report “sensible” or rounded earnings. This points to some behavioural pattern either in the setting of pay by employers or in the reporting of pay by apprentices; in other words, these “sensible” earnings act as focal points for employers and/or employees. Due to data availability, we cannot of course clarify the exact source of this pattern, something that would require a comparison between employee and employer surveys.

 When we move away from hourly paid employees, the detection of *genuine* non-compliance becomes trickier to discern. Since, for a case to be classified as a non-compliant one. we need a calculation of the hourly rate, the issue of misreporting in working hours or hours of off-the-job training (which should be remunerated) becomes important. For example, we showed the case of apprentices reporting weekly pay of exactly £100 and working 40 hours per week. The £2.50 hourly rate calculated for them cannot easily be classified as a case of genuine non-compliance (note that these cases would be compliant if either a £106 weekly pay or 37 hours were reported instead).

 The distinction between hours of work, off-the-job training and on-the-job training in the survey questions may be problematic for the estimation of non-compliance among non-hourly paid apprentices. However, we should note that even if we concentrate on these apprentices with zero hours of either on- or off-the-job training, we still estimate a 25.4% extent of non-compliance in our data.

# Provisional recommendations

This initial study produced these interim recommendations for the LPC:

* Apprentice pay surveys should be undertaken at a period when the new NMW has been established (i.e. avoid interviews during the fourth quarter of the calendar year)
* In the survey, the quality checks may be more usefully set at the AR; we speculated above that the observed spike at £2.60 may be the result of this specific check point in the APS 2012
* There appears to be a need to clarify collection of data around on- and off-the-job training; there is some ambiguity in the survey (or at least, it is open to honest mistake)
* It is not possible from this survey to identify whether employers are properly accounting for training hours; qualitative research may be the best way to acquire this information
* Some frameworks seem to be more non-compliant than others (for example hairdressing), despite high levels of AR awareness; LPC efforts may be usefully focused on these

These will however be reviewed once the 2011 and 2012 and 2014 Apprentice Pay Surveys have been analysed, and once sector specific analyses have been carried out.

# Next stages

Pending the delivery of the 2014 data, the following research will be carried out:

* On the 2012 data, re-analyse on a framework-by-framework basis to see whether framework differences can be attributed to specific factors
* Study the impact of the ‘awareness’ variable – current findings seem counter-intuitive
* Compare the above findings with 2011; for the reasons discussed above, the £2.50 minimum will be a problem for the hourly paid, but we should expect the same level of non-compliance in the non-hourly paid
* Country effects will be checked in the 2011 and 2012 data

With the delivery of the 2014 Report on the Apprentice Pay Survey,

* The ‘boundary effect’ of the survey checks will be assessed
* The robustness of the above findings will be reviewed

Time permitting, the team will investigate the Annual Survey of Hours and Earnings to triangulate findings about wage levels, although not compliance.

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# Annex A Full results from probability model

|  |  |  |  |
| --- | --- | --- | --- |
|   | (1) | (2) | (3) |
|  | No framework dummies | Full specification | Hourly paid only |
|   |   |   |   |
| Male | -0.091\*\*\* | -0.017 | -0.008 |
|  | [0.011] | [0.014] | [0.017] |
| White | -0.035 | -0.019 | 0.031 |
|  | [0.028] | [0.025] | [0.019] |
| Disabled | 0.019 | 0.009 | 0.034 |
|  | [0.019] | [0.017] | [0.025] |
| *(Base: Age 16-18, Year 1)* |  |  |  |
| Age 16-18, Year 2 or above | 0.009 | 0.003 | -0.027 |
|  | [0.020] | [0.018] | [0.017] |
| Age 19-20, Year 1 | -0.060\*\*\* | -0.055\*\*\* | -0.016 |
|  | [0.012] | [0.012] | [0.015] |
| Age 19-20, Year 2 or above | 0.144\*\*\* | 0.171\*\*\* | 0.091\*\* |
|  | [0.025] | [0.027] | [0.037] |
| Age 21+, Year 1 | -0.194\*\*\* | -0.159\*\*\* | -0.079\*\*\* |
|  | [0.014] | [0.014] | [0.019] |
| Age 21+, Year 2 or above | 0.192\*\*\* | 0.238\*\*\* | 0.197\*\*\* |
|  | [0.026] | [0.028] | [0.047] |
|  |  |  |  |
| NVQ Level 2 | 0.063\*\*\* | 0.058\*\*\* | 0.039\*\*\* |
|  | [0.011] | [0.011] | [0.013] |
| *(Base: Did not work for employer before)* |  |  |  |
| Worked for employer 0-12 months | -0.039\*\*\* | -0.043\*\*\* | -0.042\*\*\* |
|  | [0.011] | [0.010] | [0.011] |
| Worked for employer over 12 months | -0.140\*\*\* | -0.129\*\*\* | -0.134\*\*\* |
|  | [0.012] | [0.012] | [0.018] |
|  |  |  |  |
| No written contract | 0.061\*\*\* | 0.054\*\*\* | 0.038\* |
|  | [0.017] | [0.017] | [0.022] |
| Permanent job | -0.103\*\*\* | -0.093\*\*\* | -0.085\*\*\* |
|  | [0.014] | [0.013] | [0.021] |
| Working hours | 0.005\*\*\* | 0.005\*\*\* | 0.000 |
|  | [0.001] | [0.001] | [0.001] |
| Off-the-job training (incidence) | 0.050\*\*\* | 0.039\*\*\* | -0.008 |
|  | [0.010] | [0.010] | [0.012] |
| Overtime (incidence) | -0.041\*\*\* | -0.034\*\*\* | -0.022\* |
|  | [0.011] | [0.010] | [0.014] |
| Hourly paid | -0.067\*\*\* | -0.058\*\*\* |  |
|  | [0.010] | [0.009] |  |
| Receives any tips | 0.099\*\*\* | 0.024 | 0.004 |
|  | [0.017] | [0.018] | [0.021] |
| Receives any bonuses | -0.016 | 0.005 | 0.025 |
|  | [0.011] | [0.011] | [0.017] |
| Aware of AR | 0.031\*\*\* | 0.027\*\*\* | 0.011 |
|  | [0.010] | [0.009] | [0.012] |
| Holding second job | 0.110\*\*\* | 0.101\*\*\* | 0.018 |
|  | [0.027] | [0.026] | [0.025] |
| *(Base: Other framework)* |  |  |  |
| Customer service |  | -0.046\*\* | -0.027 |
|  |  | [0.018] | [0.021] |
| Business administration |  | -0.052\*\*\* | -0.013 |
|  |  | [0.015] | [0.023] |
| Retail |  | -0.055\*\*\* | -0.056\*\*\* |
|  |  | [0.020] | [0.014] |
| Health and social care |  | -0.069\*\*\* | -0.062\*\*\* |
|  |  | [0.017] | [0.012] |
| Engineering |  | -0.108\*\*\* | -0.058\*\*\* |
|  |  | [0.009] | [0.011] |
| Chidren's care, learning and development |  | 0.076\*\*\* | 0.029 |
|  |  | [0.029] | [0.033] |
| Hospitality and catering |  | -0.055\*\*\* | -0.039\*\* |
|  |  | [0.017] | [0.016] |
| Hairdressing |  | 0.099\*\*\* | 0.028 |
|  |  | [0.035] | [0.042] |
| Construction |  | -0.063\*\*\* | -0.044\*\*\* |
|  |  | [0.013] | [0.013] |
| Team leadership and management |  | -0.126\*\*\* | -0.054\*\*\* |
|  |  | [0.010] | [0.016] |
| Electrotechnical |  | -0.084\*\*\* | -0.065\*\*\* |
|  |  | [0.011] | [0.011] |
|  |  |  |  |
| Observations | 5,225 | 5,225 | 1,669 |
| Notes: Probit models; table reports marginal effects calculated at the means of independent variables; standard errors in brackets (\*\*\* p<0.01, \*\* p<0.05, \* p<0.1)  |