Why Do Employers Use Selection Tests?

Evidence from British Workplaces

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Executive Summary

It is apparent that there has been substantial growth in the use of selection tests in Britain since the 1980s and that a sizeable proportion of organisations are now utilising tests as part of the selection process (Shackleton and Newell, 1991; IRS, 1991, 1997). But the reasons why some employers use tests while others persist in not making use of them are not well understood.

The theoretical literature on selection methods suggests that a whole range of factors will play some part in influencing the organisation's use of selection tests, including both aspects of the external economic environment in which the organisation is operating and the internal characteristics of the organisation. For example, economic variables such as the amount of training required for the post, the state of the local labour market, the type of job and the level of salary which it commands may all play an important role in explaining the use of selection tests, while organisational characteristics, such as the presence of unions, the presence of a personnel department, whether the establishment is in the public or private sector could also have an influence on test use. However, in practice, there have been few opportunities to test these hypotheses on good data, because datasets combining information on selection tests and a full range of contextual variables are scarce. Almost all work in this field has been confined to examining the role of organisation size and industrial sector, thereby omitting many important variables. In addition most studies have been conducted on small and unrepresentative datasets.

We were able to avoid these problems by using two sources which provide good information on test use. Firstly, the 1998 Workplace Employee Relations Survey (WERS), a nationally representative survey of over 2,000 British workplaces which contains information on the use of two types of selection tests – personality tests and competency tests – and a plethora of information on other characteristics of the workplace. A second dataset, based on a survey conducted by the Chartered Institute of Personnel and Development (CIPD), is smaller with information on some 250 organisations included, but provides coverage of four types of test: personality, ability, literacy/numeracy and specific skills tests. For both datasets test use was modelled using logit regression equations for each type of test, with explanatory variables including both economic and organisational factors in addition to controls for workplace size and industrial sector. Differences between the determinants of

the use of the various types of tests were also explored. The key findings from the empirical analysis were as follows:

- In the WERS dataset, workplaces which engaged in high levels of formal off-the-job training were significantly more likely to use personality tests as part of the hiring process. However, there was no such relationship for competency tests.

- Workplaces which reported managerial and professional vacancies in the WERS dataset were also more likely to use personality tests for selection compared to other workplaces, while those reporting vacancies for routine unskilled manual occupations were less likely to use personality tests.

- The use of personality and competency tests in the WERS dataset were both clearly associated with the extent to which workplaces practised a range of formal policies to promote/ensure equal opportunities in the workplace. In addition, the use of competency tests was directly associated with the presence of formal grievance procedures and whether there had been complaints by employees to industrial tribunals in the recent past.

- Workplaces in the private sector in the WERS dataset were significantly more likely than public sector workplaces to use personality tests, but there was no such relationship for competency tests.

- Workplaces in the WERS dataset with vacancies for skilled craft workers and technical staff were markedly more likely to report that competency tests formed part of the selection process.

- There were also substantial differences in the determinants of the use of the four different kinds of tests in the CIPD dataset. For example, both equal opportunities practices and the presence of external consultants in the recruitment process increased the probability of using personality tests but neither of these factors was found to be significant for general ability tests.

The paper summarises the results from one component of the CEE research programme on the use of selection tests. It should be read in conjunction with Jenkins and Wolf (2001) which provides a qualitative analysis of the reasons behind the growth in test use, based on interviews with employers across a range of industrial sectors, while a survey of the literature on selection tests is provided in Jenkins (2001).

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Acknowledgements

1. Introduction

This paper investigates the determinants of selection test use in British workplaces using a large, nationally representative dataset. It is clear that there has been substantial growth in the use of selection tests in Britain since the 1980s and that a sizeable proportion of organisations are now utilising tests as part of the selection process (Shackleton and Newell, 1991; IRS, 1991, 1997). The question that this raises is why some employers are using tests while others persist in not making use of them. Now, the adoption of tests can be regarded as one way of formalising recruitment and selection procedures, and theoretical work on the degree of rigour and formality in the recruitment and selection process has emphasised that it will be influenced both by the external business context, such as the sector in which the organisation operates and the kind of labour market it faces, and by internal structures and processes (Olian and Rynes, 1984; Johns, 1993). So a range of factors may have an effect on the likelihood that employers will make use of selection tests. For example, with reference to the external context, it has been argued that formal selection methods, such as tests, are less likely to be used when the organisation is operating in conditions of labour shortage (Windolf and Wood, 1988) while the business sector in which the organisation is operating may also be important (Scholarios and Lockyer, 1999). Internal, organisational characteristics which influence the probability of using tests include the presence or absence of a personnel department (Marsden, 1994) and the size of the organisation (Millward et al, 1992).

These theoretical hypotheses may seem plausible but have, to date, been subject to very little empirical testing. In this paper, we draw on two sources of data to test a range of hypotheses about test use: the 1998 Workplace Employee Relations Survey (WERS 98) and the Chartered Institute of Personnel & Development (CIPD) 2001 Recruitment Survey. We aim to provide a thorough analysis of the factors which influence test use. The paper is divided into a number of sections. The early sections of the paper review the existing literature. Drawing on the theoretical literature, we develop in some detail a set of hypotheses about the economic factors and organisational characteristics which are likely to influence test use and we review the empirical literature to show that these theories have not been subject to much empirical testing. In the middle part of the paper (sections 4 to 7) we describe and then analyse the Workplace Employee Relations Survey (WERS 98), a large nationally representative dataset which is our main source for investigating the determinants of selection test use. Later sections of the paper (sections 8 and 9) discuss the results

obtained from the CIPD dataset, which is smaller than WERS 98 but which we use to study different types of selection test in some detail. Section 10 draws together the main implications of our results and offers some conclusions.

2. Theoretical Perspectives on Test Use

As recent research on the selection process has made clear, it is necessary to take account both of the external context of the organisation and of the internal methods which it utilises for dealing with that context if we are to have an adequate understanding of the nature of the organisation's hiring methods (e.g. Scholarios and Lockyer, 1999; Marsden, 1994). In discussing the determinants of test use, then, we make a distinction between largely external economic or occupational factors, on the one hand, and internal organisational characteristics on the other. These are discussed in turn, and the main determinants of test use summarised in Table 1.

Economic Factors

An economic perspective on recruitment and selection suggests that employers will typically make an assessment of the costs and benefits of alternative selection processes, although not necessarily in a rigorous, quantitative manner. Formal selection procedures help the employer to screen more precisely, improving the quality of the signals provided about the abilities of applicants and so reducing the probability of hiring unsuitable applicants (Barron et al, 1989). Variation in selection methods can thus be explained mainly by variation in these costs and benefits according to the different kinds of job vacancies that employers are aiming to fill.

There are fixed costs associated with using tests and larger workplaces, or workplaces which are part of a larger parent organisation, have more vacancies over which to spread the fixed costs of using tests. One would expect, therefore, higher use of selection tests in such workplaces (Marsden, 1994). Barron and Bishop (1985) argue that the costs of monitoring employees may be greater for large organisations, and this would also imply that they would spend more on selection techniques in order to minimise the risk of hiring unsuitable

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employees, given that monitoring once employees have been recruited may therefore be imperfect.

The difficulties of monitoring may also vary by type of occupation, and this can also help to explain variation in the use of selection tests. The economics literature on incentives focuses on the problems of monitoring and setting appropriate reward schemes for those who perform multiple tasks in their jobs (Prendergast, 1999). In both the public and private sectors employees may be multi-tasking and their output or productivity difficult to observe, and they could also have rather different objectives and interests from those of their superiors. As a general rule, managers' behaviour will be less easy to monitor and measure than that of skilled manual workers, clerical workers, or professional and technical workers and we can predict that this will lead to greater expenditure in the recruitment and selection process for managers, including high levels of test use for managerial occupations (Jenkins and Wolf, 2001). Testing will be used to try to ensure that unsuitable managers will not be hired since it will be difficult to monitor their activities once in post.

Straightforward application of the cost/benefit logic suggests that the use of selection tests is more likely for jobs which require substantial amounts of training because training is costly, and this makes it more important to hire employees who are suitable for the post and can benefit from training. The use of tests can help to ensure that applicants who are suitable for training are hired. Similarly, the use of intensive selection methods, including tests, is worth investing in for jobs with long tenure or where organisations are operating an internal labour market (Marsden, 1994). If employees are likely to be with the company for a long time, or are likely to be promoted, then this increases the benefits of using expensive selection procedures such as tests. Conversely, companies with many employees on short-term contracts are less likely to make use of tests.

Employers will also search more intensively in order to fill positions when the variation in productivity between good and bad employees is high. In such cases, additional search activity, including the use of tests, will help to reduce the chances of missing a highly productive applicant. Conversely, there is not much point in drawing on costly selection tests if the variation among job applicants is very small (Barron et al, 1997). Again, it may be conjectured that there will be much more variation in performance among managerial job applicants than among, say, unskilled manual workers.

From an economic perspective, the ease or difficulty of firing unsatisfactory employees may affect selection procedures. For instance, if it is more difficult or more costly to fire employees who turn out to be unsatisfactory then those in charge of hiring within

organisations will respond by selecting more carefully. The influence of labour market conditions on test use may be quite complex. High unemployment could reduce expenditure on recruitment and selection because it is then easier to get applicants of the required quality (Barron et al, 1997). On the other hand, if high levels of unemployment lead to organisations being flooded with applicants of highly variable quality, then it is possible that this could lead employers to make greater use of tests in order to sift applicants more effectively (Jenkins, 2001, pp 23-24).

The probable impact of the economic variables on test use is summarised in Table 1. It is predicted that the probability of using tests will be greater for jobs which attract higher salaries or that have higher training costs. Monitoring costs and higher variation in applicants' productivity will have the same effect. Larger workplaces and those which form part of a larger organisation will be more likely to make use of tests. On the other hand, jobs which have short-term contracts or jobs from which unsatisfactory employees can more easily be fired will have a lower probability of using tests. As for the influence of the labour market, this could go in either direction.

Organisational Characteristics

Theories about the effect of organisational characteristics on selection test use start from the supposition that test use is one aspect of a broader formalisation of the personnel function. It is to be expected that the use of tests will be more likely in organisations which have formalised their approaches to other tasks (Marsden, 1994; Baron et al, 1986, 1988). Indeed, there is some evidence that various different aspects of formalisation are often closely associated with each other (Ramsay et al, 2000). For many tests, although by no means all, correct and legitimate use requires that the test administrators have obtained certification in test use, and are therefore aware of how the tests should and should not be used, the right conditions in which to use the tests, and how the test results should be analysed and interpreted. Such a body of knowledge will be more common in organisations which have specialist staff operating within a personnel or human resources department. This implies that test use will more frequently be found among those organisations with a personnel department. Cohen and Pfeffer (1986) reach a similar conclusion by focusing on the internal politics of the organisation. They argue that personnel professionals use their knowledge of tests and other selection procedures to maintain and improve their power and status within the organisation (see also Baron et al, 1986, 1988).

It is predicted that, other things being equal, public sector organisations will be more likely to adopt selection testing than those in the private sector. Public sector organisations, it is thought, will be under particular pressure to adopt selection methods which appear to be objective and fair (Dobbin et al, 1988; Scholarios and Lockyer, 1999). Test use may also be associated with the presence of trade unions. The argument here is that the absence of formal recruitment and selection methods will make it easier for unscrupulous firms to exclude those with pro-union sympathies. Hence trade union officers will be eager to ensure that formal selection procedures, such as tests, are put in place (Cohen and Pfeffer, 1986). Testing may have increased as part of an effort by organisations to make the selection process more transparent and fair, either because some organisations have a strong substantive commitment to fairness at work, or because of a desire to demonstrate that formal equal opportunities procedures are in place. However, some legal judgements in the US striking down some companies' selection procedures based on tests may well have had a discouraging effect on test use more generally. So there could be differences between US and UK experience here (Jenkins, 2001; Dobbin et al, 1993). The presence of grievance procedures is another aspect of formalisation which might well be associated with test use. The presence of internal labour markets is likely to imply that workers have long tenure with the organisation and this will increase the likelihood of using tests as part of the screening process. Finally, there is some empirical support in the sociological literature for the notion that older organisations tend to have more formalised procedures than younger ones (Marsden et al, 1994). So, if test use is part of this process of formalisation, then it is possible that we would observe greater use of tests among older organisations.

As with the economic variables described earlier, this brief review of the literature on organisational characteristics enables us to make some predictions about the signs of the organisational variables determining selection test use, as shown in Table 1. Test use is predicted to be lower in the private sector as compared to the public sector. The presence of a personnel specialist and the presence of trade unions will tend to increase the likelihood of test use, as will commitment to equal opportunities, the use of formal grievance procedures and the operation of an internal labour market. Older organisations may be more likely to use tests than younger ones.

3. Review of Empirical Literature on Test Use

There is very little published research which attempts to test these hypotheses empirically. For the US, research by Marsden (1994) utilised a nationally representative dataset of 688 workplaces, the National Organisations Study, to investigate these issues. For the use of cognitive ability tests only the age of the establishment was significant in a multi-level regression analysis and a range of other contextual variables such as the size of the establishment, whether it was multi-site, whether it was in the public sector, the presence of a personnel department and the presence of unions were all statistically insignificant. For skills tests, union presence had a positive and significant influence on test use, as did formal training, while skills tests were less likely to be used for managerial occupations. Other US studies such as Cohen and Pfeffer (1986) have tended to focus only on organisational factors and neglected the economic context in which the organisation operates. Their findings, that the presence of a personnel department had a positive effect on test use while the effect of unionisation was negative, need to be qualified accordingly.

Outside the US there is only limited information on this topic. For example in the UK organisation size has often been identified as a key factor in studies of selection tests. Mabey (1989) drawing on a sample of 300 large, private sector organisations in the UK reported that test use increased with firm size. The sample was split into those organisations with up to 2000 employees, and those with 2000 or more employees. Some 74 per cent of the larger organisations made use of tests of aptitude, ability or general intelligence compared to 62 per cent of the smaller organisations, while for personality questionnaires, these were utilised by 59 per cent of the larger organisations but only 41 per cent of the smaller organisations. These differences between larger and smaller organisations were found to be statistically significant at the five per cent level.

Campbell et al (1997) used data on private sector companies in Scotland drawn from a Chambers of Commerce survey. Most of the firms in the sample were small or medium sized, and the total sample consisted of 867 companies. The researchers found that the proportion of firms using personality tests and psychometric ability tests increased with size. For example, seven per cent of the smallest firms (less than twenty employees) used ability tests compared to 23 per cent of firms with 100 or more employees. The IRS surveys (IRS, 1991, 1997) also tend to confirm that test use increased with organisation size, apart from literacy/numeracy tests which were most widely used amongst medium-sized organisations.

However, since the overall sample sizes were only 173 in 1991 and 157 for the 1997 survey, the numbers in each size category were very small.

There is some evidence that test use varies with the type of job vacancy being filled. For example, the IRS surveys (IRS, 1991, 1997) suggest that personality testing was highest for managerial vacancies, while literacy and numeracy tests were most commonly used for clerical posts. Bevan and Fryatt (1988) found that, among the employers in their sample who were using cognitive tests, some 65 per cent were using them for managerial vacancies, 42 per cent were using them for scientific/technical vacancies, 44 per cent for marketing vacancies, 19 per cent for clerical/admin vacancies, but seven per cent or less for manual and skilled craft vacancies. Similarly, for personality testing, among those using tests some 64 per cent were making use of them for managerial vacancies, falling to 53 per cent for marketing posts, 15 per cent for clericals and only two per cent for skilled craft jobs. Campbell et al (1997), in their study of mainly small firms in Scotland, found that personality tests and ability tests were more widely used for managers than for other occupational categories. The variation in the remaining occupational categories (technical, skilled and clerical) was quite small.

Industrial sector has also been identified as an important explanatory variable in some studies. The IRS surveys, although not very robust because of the very small numbers in each industrial category, found that literacy/numeracy testing and personality testing were lower in the public sector than the private sector, and that personality tests were very common amongst financial services firms (IRS, 1997). Campbell et al (1997) reported that over half of of financial companies in their sample used personality tests for managers, compared to 22 per cent in wholesale, 18 per cent in manufacturing, 15 per cent in tourism and only 10 per cent in construction. There was a similar pattern for ability tests, which were also widely used by finance companies, and little used by construction companies, with the other sectors in between these two extremes. In case studies of 21 Scottish organisations, Scholarios and Lockyer also report that there was a difference between private and public sector approaches to personnel, ' in local government and health, for example, the requirements of employment legislation were given a much higher priority than in other sectors. Demonstrating impartiality and consistency and making decisions which could be subject to public scrutiny occupied a more prominent role than elsewhere' (Scholarios and Lockyer, 1999).

It is clear that, with the exception of one or two US papers, research has focused on the effects of organisation size, variation by type of job vacancy and on variation by

industrial sector. All of these variables are important to include in empirical work but concentrating on them alone means that the effects of many key variables stressed by theory, including the presence of a personnel department, unionisation, training and tenure have been left out of the analysis. It is likely that too much emphasis has been placed on the size of the organisation when it may really be acting as a proxy for other organisational characteristics and most of the analysis has been concerned only with bivariate correlations, rather than with multivariate analysis. Most studies have also been conducted on very small samples, and these have not been in any way representative of the population of firms in the economy as a whole. Therefore the results reported in this paper are particularly valuable because we are able to overcome these problems through use of a large-scale dataset which has not previously been utilised for analysing selection tests.

4. The WERS Data

Our main source of data for analysis is the 1998 Workplace Employee Relations Survey (WERS 98), a large government-sponsored survey of public and private sector workplaces in Great Britain. It includes information obtained from interviews with the manager at each workplace most responsible for personnel matters, a worker representative, and a questionnaire survey of employees (Cully et al, 2000). We use the WERS 98 management questionnaire which achieved an excellent response rate of 80 per cent, and contains data on 2,191 British workplaces. In contrast to many surveys which concentrate on large firms the WERS survey, when appropriately weighted, is nationally representative of workplaces with ten or more employees within Standard Industrial Classification (SIC) major groups D to O.[1]

The WERS management questionnaire included the following two questions:

'When filling vacancies at this workplace, do you ever conduct any type of personality or attitude test?'

and

'When filling vacancies at this workplace, do you ever conduct any type of proficiency or competency test?'

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[1] Agriculture, forestry and fishing, mining and quarrying were excluded from the survey.

For each type of test respondents were also asked about the type of vacancies for which the tests were used. The WERS data indicate that 19 per cent of all UK workplaces make use of personality tests for some vacancies, while 48 per cent make use of competency/proficiency tests.

How do we test the hypotheses listed in Table 1 with the WERS data? Most of them can in fact be tested directly. For example, to examine the economic hypotheses from Table 1, there is information in the data about the size of the establishment and whether or not it is part of a larger organisation. There is a banded variable for the salaries of employees and we use the proportion of them within each workplace earning more than £22,000 per annum at the time of the survey in 1998 to test whether test use is more likely for occupations which attract higher pay. For training there is no measure of costs but there is information on the proportion in the largest occupational group who have received training in the previous twelve months and on whether or not the workplace has Investor in People status (an award for good practice in training and development), a broader measure of its commitment to training. We experimented with several measures of the extent of short-term contracts including whether or not there were some employees on contracts of less than one year, fixed term contracts of less than two years, and whether or not the respondent indicated that employees in the workplace were led to expect long-term employment. Results are reported for each of these, although none of the measures is ideal. Ease of firing was assessed through a variable which asks whether any group of employees in the workplace had guaranteed job security. The dataset does not contain direct information on variation in applicants' productivity or on monitoring of employees. If, however, we assume that managers have more potential variation in productivity than other categories of employee then we can use the proportion of managers in the workplace, and whether or not managerial vacancies have occurred in the preceding twelve months as a measure of potential variation in productivity. Test use should greater be in workplaces which have had managerial vacancies and/or where there is a high proportion of managers. For monitoring, we looked at performance related pay (PRP) since if employees do receive PRP then it can be inferred that output can be monitored and measured. For the last of the economic variables, local unemployment, we have a banded variable on the level of unemployment in the travel to work area of the establishment.

There is also information on the range of workplace characteristics listed in Table 1, including whether the workplace is in the public or the private sector, and whether there are recognised trade unions at the workplace. For the role of personnel a variable was

constructed for whether or not a personnel specialist was present at the workplace. Information on the length of time the workplace has been at its current address is contained in the dataset and this was used as a proxy for workplace age. Two variables were used to assess the commitment to equal opportunities, firstly whether an equal opportunities policy existed at the workplace and secondly, the number of equal opportunities practices in place. The use of two variables is justified by the fact that an equal opportunities policy is sometimes regarded as cosmetic and may not always signal a strong commitment to equal opportunities (Noon and Hoque, 2001). We also have measures of the presence of grievance procedures at the workplace, and the extent of internal labour markets (measured as a preference for promoting internal candidates rather than recruiting people from outside the organisation). Full details of all the variables used in this study are provided in the Appendix, and descriptive statistics are contained in Table 2.

5. Competency and Personality Tests in WERS

The existing theoretical literature on test use does not really address differences in the determinants of use for the various kinds of tests even though we know from survey data that levels of use differ significantly. As noted, in WERS 98 there is separate data on the use of personality tests and competency tests. There are no definitions in WERS of what these actually consist of, but it is plausible to suppose that respondents understood personality tests to be those constructed and supplied by commercial test companies which tend to be confined to licensed test users. To become a licensed user requires training, provided by the test publishing company, and can be expensive. Competency tests, on the other hand, are likely to include such things as typing and word-processing tests, and these are often constructed in-house rather then by specialist test publishing companies. Because of these very substantial differences between competency and personality tests, then, we would expect differences in the determinants of the use of these tests. We advance seven testable propositions about what these differences are likely to be.

Firstly, personality tests require licensed expertise, usually acquired through courses run by the companies selling the tests, so using personality tests is expensive. It is plausible, then, that larger workplaces, where more people are being recruited, will be able to spread these costs and are therefore more likely to draw on personality tests. Competency tests (e.g.

a word-processing test) are mostly cheaper to administer (because they do not require the expensive fixed cost of training) and so the link with establishment/organisation size would be less strong.

Proposition One: Personality test use will be more closely associated with workplace size than will competency test use.

Testing for competency implies that new recruits are expected to have many relevant skills already and so may require little in the way of training. One of the functions of personality testing is to assess whether applicants are suitable for training. This leads to an hypothesis about the impact of training on the use of these tests.

Proposition Two: A much stronger link with firms' training practices is anticipated for personality testing than for competency testing.

While the theoretical literature on selection methods tells us that the presence of a personnel specialist at the workplace will make it more likely that tests will be used, it is the case that certain tests are more straightforward to administer than others. Personality tests require considerable professional expertise to use and interpret while this is probably less true of competency tests. Therefore, we can suggest another difference between the likely determinants of the two types of test.

Proposition Three: the use of personality tests is likely to be more strongly associated with the presence of a personnel specialist at the workplace.

Sectoral variations in the determinants of test use are to be expected. This is a common theme in the literature. In service sector jobs it is often necessary for employees to interact with customers, which means that it is of great importance to select people with the right sort of personality for dealing well with customers, in contrast to production line workers in manufacturing who are unlikely to meet any customers.

Proposition Four: Personality tests are more likely to be used for vacancies in the service sector than are competency tests.

We would expect occupational variations, in the use of tests, too. It may be difficult to assess the competency of managers and sales staff, but interpersonal skills are clearly very important for these roles, but less so for a craft worker, where output can be measured. Competency is important and capable of assessment for technical, clerical, and craft vacancies, while it would be less important for unskilled work.

Proposition Five: Personality tests are more likely for vacancies for managerial and sales jobs while competency tests are most likely to be used for technical, clerical, and craft vacancies.

Earlier we discussed the role of monitoring of employees, and the likelihood that it would be linked to test use which we can assess indirectly by looking at the use of performance-related pay in the workplace. However, even in situations where output can be monitored and performance-related pay is in place the selection decision is still important because, for example, firing employees who turn out to be unsatisfactory is costly. So it may well be the case that there will still be some use of tests even in situations where output can be measured. Moreover, jobs for which output can be measured are also likely to be ones for which competency tests can be successfully deployed. This leads to some refinement of the initial hypothesis about the relationship between test use and performance-related pay.

Proposition Six: We expect a negative relationship between personality tests and performance-related pay, but the relationship between competency tests and performance-related pay could be positive.

Finally, as discussed above, the theoretical literature anticipates a positive relationship between unionisation and test use, largely because it is perceived that the unions will have an interest in fair selection. However, it may be that union recognition will be more closely linked with competency tests than personality tests, not least because of the industrial sectors in which the unions have traditionally been strong. So we infer:

Proposition Seven: Test use is positively correlated with union recognition, but the relationship will be much stronger for competency tests than for personality tests.

6. Method for Analysing the WERS Data

In order to examine the determinants of selection tests by British establishments, drawing on the rich array of explanatory variables available in WERS 98, survey logit modelling techniques were utilised. The survey logit procedure was preferred because it takes account of the complex design of the WERS 98 survey, which incorporates both probability weights and variable sampling fractions (Forth and Kirby, 2000; Purdon and Pickering, 2001)[2]

We constructed separate dependent variables for personality testing and for competency/proficiency testing. Each of the dependent variables takes the value one if an establishment was using that form of selection test at the time of the survey and zero otherwise. These dependent variables were then regressed on a range of explanatory

variables which measure the hypotheses identified as important in earlier sections of this paper.

Because of the large number of variables to be investigated, the statistical modelling of the determinants of test use proceeded in a number of stages. Initially, the effects of workplace size alone were examined as this has been one of the key explanatory factors in most previous studies of the question. Economic factors and organisational characteristics were regressed separately on the test dummy variables, and were then combined together with the significant size variable in later stages of the analysis. Finally, we added some additional controls for industrial sector.

7. Results

Empirical Evidence on the Determinants of Personality Tests

We begin by looking at factors influencing personality test use. The logit regression results are shown in Tables 3 to 7. The tables report the coefficients of survey logit regression models, along with standard errors and significance levels for each variable. The number of observations, and the proportion 'correctly' predicted, using a cutoff point of 0.5, are also reported in each table.

Initially, the effects of establishment size and whether the workplace was part of a larger organisation were examined. As expected, in the absence of any other explanatory factors at least, establishment size has a significant effect on the probability of being a user of personality tests (Table 3A). The dummy variable for whether or not the establishment formed part of a larger organisation was not statistically significant (see Table 3B). Next we considered all the economic variables (listed in full in the Appendix) such as training, long-termism in job contracts, the ease of firing employees, and variables relating to pay. All of these variables were entered into a logit regression for personality test use. In order to achieve a more parsimonious specification, variables which were insignificant, even at the ten per cent level, were removed from the equation one at a time, and the effects on the coefficients of the remaining variables examined at each stage. The variables dropped from the analysis at this stage included the measures assessing whether employees were led to

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[2] The statistical package Stata was used to run the survey logit models. See StataCorp (2001) for more details

expect long-term employment, whether there were any employees in the workplace with guaranteed job security and whether there were employees on fixed-term contracts of more than one year, as well as the proportions of employees in managerial, technical, clerical, sales and routine unskilled occupations, and also the proportion of the workforce on high salaries. None of these variables was individually significant and an adjusted Wald test confirmed that they were not jointly significant. The model arrived at as the outcome of this process of dropping the insignificant variables is shown in Table 4. Among the economic variables which played a role in determining the likelihood of personality test use, training was particularly important. Those workplaces where a high or medium proportion of employees in the largest occupational group had received training in the preceding twelve months were markedly more likely to be personality test users compared to workplaces where no such workers had received training. The broader training measure, the attainment of Investor-in-People status, was also significant in the regression. As predicted, those workplaces which had had managerial vacancies in the previous twelve months were more likely to be using personality tests. However, the proportion of managers in the workplace had no discernible effect and was dropped from the analysis, while a high proportion of professional employees lowered the probability of using personality tests. It should be noted that there was very little variation in the proportion of managers in the workplace – most establishments had some managers and very few had a predominance of managers. Workplaces with very high proportions of professionals may be practices of architects, accountants or lawyers, where tests are seldom used (Scholarios and Lockyer, 1999). There was not much variation in personality test use by local unemployment rate, but workplaces located in the regions of highest unemployment tended to have lower usage of personality tests. Contrary to theoretical predictions, if performance related pay was used in the workplace there was a positive effect on the probability of being a personality test user.

A similar approach was adopted for the workplace characteristics. All the workplace characteristics were entered into a regression, separately from the economic factors and workplace size. The specification which resulted here - once insignificant variables had been dropped - is shown in Table 5. There was a markedly lower probability of using personality tests in public sector workplaces, while the equal opportunities variables had a strongly significant effect of increasing the likelihood of using personality tests. There was also a weak statistical relationship between workplace age and the use of personality tests. Neither

on the survey logit commands and on how complex survey data is handled.

the presence of trade unions, the presence of a personnel specialist, or the operation of an internal labour market appeared to have an effect in determining the use of personality tests, and these variables were dropped from the regression equation.

The next stage in the analysis was to combine the significant economic and sociological variables with the establishment size dummy variables. The result of combining them all is shown in Table 6. Some further controls for industrial sector were also included, as listed in Table 7. Thinking of the hypotheses about the influence of economic factors, as summarised in Table 1, and the results obtained for personality test use, it is very striking that there is a strong relationship between the training variables and the usage of personality tests. This provides good evidence that where training is to be given to new employees then selection tests are more likely to be used in order to check the suitability of job applicants for benefiting from such training. For the local unemployment rate only the highest category of unemployment was significant. This may suggest some support for the idea, put forward by researchers such as Windolf and Wood (1988) that formal selection methods, such as personality tests, are used less when there are plenty of job applicants available.

Another prediction was that, because the productivity of managers was thought to be particularly variable, tests were more likely to be used as screening devices for managerial vacancies. It was indeed the case that managerial vacancies increased the likelihood of using personality tests, although the proportion of managers in the workplace did not exert any influence on test use. It was also predicted that the use of performance-related pay would lower the probability of using tests because the presence of PRP implies that output can be monitored. In fact, PRP took the opposite sign to that expected in some of the regressions, although it became insignificant once controls for industrial sector were included (Table 7). There was no evidence that a range of other variables, including short-term contracts, long termism in employment, job guarantees for workers, or higher salaries had any significant effects on personality test use. Before definitely rejecting these as explanatory variables, however, it is important to emphasise that the measures for testing these hypotheses were fairly crude.

Turning to the characteristics of workplaces, there was good support for the hypothesis that higher commitment to equal opportunities practices increased the probability of using personality tests in selection. Some of the workplace age variables were also found to be significant, although the effect is not clear-cut. Workplaces of five to nine years' old, and workplaces of over 25 years were more likely to be personality test users compared to the newest workplaces (zero to four years) but the variable for workplaces of ten to 24 years was

not significant. The absence of a relationship between the presence of a personnel specialist and the use of personality tests was surprising since it would have been expected that the expertise of a specialist would have been important for making use of tests of this type. Contrary to the predictions in Table 1, public sector workplaces, tended to have a significantly lower probability of personality test use than private sector workplaces. One possible explanation for this is that there is considerable doubt on the validity of personality tests in predicting job performance (Blinkhorn and Johnson, 1990; Tett et al, 1991) and those responsible for selection in the public sector may be particularly reluctant to use them for this reason.

Empirical Determinants of Competency Test Use

The same approach of testing size, economic factors, workplace characteristics and other variables separately in the first instance before combining them was adopted for the use of competency tests, as reported in Tables 8 to 12. Table 8 confirms that establishment size was highly significant in the absence of any other explanatory factors, while being part of a larger organisation did not exert a significant influence.

The influence of economic factors on competency test use is reported in Table 9. It is noticeable that none of the training variables were significant for competency test use. The proportion of clerical staff in the workplace had a positive influence on competency test use. As Table 10 shows, many of the workplace characteristics were not found to be significant in determining competency test use, including internal labour markets, the presence of a personnel specialist and the presence of trade unions, the age of the workplace and whether or not it was located in the public sector. However, the presence of grievance procedures was important, as was the commitment to equal opportunities. The economic factors, workplace characteristics and size variables were combined in Table 11 while controls for industrial sector were added in Table 12. In the final specification the proportion of unskilled employees at the workplace was negatively associated with the use of competency tests and was highly significant. There is not much point testing for the skills of unskilled workers. The extent of equal opportunities practices was also highly significant, implying that those workplaces with a strong commitment to equal opportunities were likely to use competency tests as part of their efforts to ensure fairness in selection. There was also an association with whether the workplace had grievance procedures in place. Short-term contracts and performance-related pay were also statistically significant, but with the opposite sign to that

predicted. It is not clear how the result for short-term contracts might be explained but note that the statistical relationship is quite weak. The relationship between test use and performance-related pay is among the issues addressed in the next section of the paper.

Differences in the Determinants of Competency and Personality Test Use

We turn next to differences in the determinants of competency and personality test use, where a number of hypotheses were tested. As predicted in proposition one, the statistical association between personality tests and establishment size was noticeably stronger than that for competency tests and establishment size, once the impact of other influences on test use had been allowed for. This suggests that the greater formality and expense of personality tests increases the likelihood that larger establishments will make use of them.

The training variables were much more strongly associated with the use of personality tests than they were with competency tests and this was also in line with what might be expected (proposition two). Indeed, for competency tests there was no evidence of a statistically significant link with training, and it was dropped from the analysis at an early stage, whereas the training variables were highly significant for personality test use even when a full range of other explanatory variables were included, as in Table 7. This confirms that those who use competency tests were expecting applicants to be ready for work whereas personality tests may be used to assess potential and suitability for training.

There was no empirical support for proposition three, which suggested that personality tests were associated with the role of personnel specialist more strongly than for competency testing. In fact, the variable for the presence of a personnel specialist was not statistically significant in either the regression for competency tests or for personality tests.

Proposition four suggested variation in the type of test used according to the sector in which the workplace was located. This was strongly confirmed by the data. As anticipated, the sectors where statistically significant links with personality tests were found were in the service sector, namely wholesale/retail, financial services, other business services and utilities. For competency tests on the other hand, the statistical associations with service sectors tended to be negative for wholesale/retail and hotels/restaurants, and were otherwise insignificant.

As for the relationship between occupations and the type of test used (proposition five) for personality tests, those organisations with managerial vacancies and professional vacancies were positively associated with use of this type of tests, while the association with

routine unskilled work was negative. For competency tests, positive associations were found with vacancies for craft/skilled workers and technical/scientific workers and this is in line with our predictions.

There is some support in the analysis of the WERS data for proposition six, on differences in the relationship of competency and personality tests with performance-related pay. In the regression models for competency test use, PRP is a positive and significant explanatory variable. This suggests that competency tests are used for jobs where output can be monitored, making it possible to use performance-related pay. Personality test use was also positively related to PRP in some regression models but this effect disappeared once we controlled for industrial sector (Table 7).

Finally, proposition seven maintained that union recognition would be more closely linked to competency tests than personality tests. In the absence of other explanatory variables, the correlation between competency test use and union recognition was positive and significant at the one per cent level, while the relationship between personality test use and union recognition was not statistically significant, even at the 20 per cent level. Once other explanatory factors were introduced union recognition was not a significant determinant of either personality or competency test use. It is the case that union recognition is closely associated with several of the other organisational factors, making the effect of unions alone difficult to determine. For example, as Cully et al (2000, p. 93) note, 'union recognition is predominantly a public sector phenomenon' with some 93 per cent of public sector workplaces recognising a union compared to only 21 per cent of private sector workplaces. Similarly, equal opportunities policies and practices are more common in unionised establishments, while the presence of grievance procedures and complaints to industrial tribunals is also more common in workplaces where a union is recognised. The fact that grievance variables were a significant influence on competency test use then could, at least in part, be attributable to the presence of trade unions in the workplace.

8. The CIPD Recruitment Survey

We conducted some further investigations of differences in the determinants of various types of selection test using data from the CIPD Recruitment Survey. The Chartered Institute of Personnel and Development (CIPD) publishes an annual survey of recruitment and selection

methods in the UK. We contacted the CIPD in 2000 and asked them whether they would be willing to include some additional questions on test use in their 2001 survey, and this they agreed to do. While the CIPD dataset is smaller than WERS and less rich in terms of explanatory variables it does contain details on different types of tests used by employers. More specifically, the 2001 survey distinguishes personality, general ability, literacy/numeracy, and skills tests. The survey was restricted to organisations with 50 or more employees. Above that threshold, the sample was drawn to provide a representative sample of UK workplaces in terms of workforce size. The achieved sample size was 253 and in each case the respondent, interviewed by telephone, was the most senior person responsible for recruitment in the organisation.

The use of tests by organisations in the sample is summarised in Table 13. It can be seen that about 41 per cent of respondents were using personality tests, 45 per cent were using literacy/numeracy tests, 55 per cent were using tests of general ability and about 60 per cent made use of tests of specific skills. The survey also contains information on variation in the use of each of these tests for three occupational categories – professionals, managers and skilled manual workers, as shown in Table 14. Personality tests were most commonly used for managers, and few organisations reported their use for skilled manuals; tests of specific skills were most common among professional staff. Respondents were also asked whether they had increased their use of the various types of tests in the past two years and the response to this question is recorded in Table 15. Increased use of personality tests was reported in 27 per cent of organisations, and almost 25 per cent reported increased use of general ability tests. The most common response for all types of tests, however, was that use of the test was about the same as two years previously.

As with the earlier analysis of WERS, the determinants of test use in the CIPD survey were investigated through logit regression analysis. Binary dependent variables were created for each type of test and these were regressed on a range of explanatory variables.[3] The CIPD dataset contains a good deal of information on other characteristics of the organisation, besides test use, and the set of explanatory variables used in the analysis is shown in Table 16. The dataset includes a banded variable for the size of the organisation, and this was used to create some dummy variables for different sizes of organisation. There is also information on the broad sector in which the organisation was located – manufacturing, services or public sector. There is limited information on the labour market, but we use the question on

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[3] Since the CIPD dataset, unlike WERS, is based on a simple random sample survey design, the complications of allowing for weighting in the logit regression analysis did not arise.

experiencing difficulties in recruitment to create a dummy variable for the 'tightness' of the labour market faced by the organisation. In theory, this could increase or decrease the use of tests (see Section 2 above for discussion of theory). Equal opportunities have sometimes been hypothesised to play an important role in determining the use of selection tests and we analysed two variables here. Firstly, whether any steps are taken to promote a diverse workforce, and the number of practices used to promote diversity up to a maximum of six. Some 208 of the 253 respondents said that their organisation took steps to promote a diverse workforce and the mean score on the number of practices for promoting diversity was 2.41 (standard deviation 1.67).

There is a wealth of information in the dataset about many aspects of the recruitment process and we draw on several of these variables in our analysis. One factor which may influence test use is the presence or absence of personnel specialists. Data available in the CIPD survey includes the involvement of local and central personnel staff, and external consultants and the role of line managers. Dummy variables were created for the involvement of local personnel staff in recruitment, for the involvement of central personnel staff, for either local or central staff and for the involvement of external consultants. For line managers, two variables were experimented with, one a simple dummy for any involvement of line managers and also a score variable according to the extent of their involvement. There are also some questions in the survey about the time perspective adopted in recruitment: whether the focus is solely on the immediate vacancy or whether consideration is also given to other tasks which might be done in future. This longer term perspective is likely to be associated with increases in the use of tests.

Other information on the recruitment process which was extracted from the survey includes whether or not the organisation insists that applicants have the exact skills required when recruiting to the post. It is presumed that this would increase the use of tests as a check on whether those important skills are present. There is data on the use of informal methods, such as filling vacancies by word of mouth and through speculative applications. This informality is likely to be associated with a lower probability of using formal selection methods, such as tests. The use of recruitment agencies may imply that the organisation employs people on short-term contracts and temporary workers. The number of different recruitment methods and the evaluation of recruitment and selection methods are measures of the extent of effort devoted to recruitment/selection and are likely to be associated with increases in the probability of test use. Organisations could have up to 13 different methods of recruitment. In practice, the highest score was 12 and the lowest one, with a mean score

on this variable of 6.73 (standard deviation, 2.13). Out of the 253 organisations in the survey 192 did evaluate recruitment and selection and 61 did not. Some descriptive statistics, comparing test users and non-test users on each of the four types of test, are shown in Table 17.

Thinking about the results from the preceding analysis of the WERS data, it is clear that not all the variables we would ideally like to study are available in the CIPD dataset. Among the economic factors we lack data on perhaps the most crucial is training in the organisation; there is also no information on salaries and performance pay, which may be important. The sociological factors are perhaps better represented but we do not have information on the organisation's approach to grievance matters and there is also nothing on unionisation. The age of the organisation is also not present in this dataset. Finally, the data refer to the organisation as a whole so it has to be assumed that the appropriate level of analysis is the organisation rather than, say, the workplace.

9. Results of Analysing the CIPD Dataset

For each type of test, simple logits were initially run. Those explanatory variables which were significant at least at the 25 per cent level were entered into multiple logit regressions. Insignificant variables in the multiple logit regressions were removed sequentially in order to achieve more parsimonious specifications. Likelihood ratio tests were used to compare the final models resulting from this process with the initial model. We also report pseudo-R^2 statistics as a measure of goodness-of-fit.

For personality testing, the final multiple regression model is shown in Table 18. The results show that the use of personality tests was positively related to organisation size and the presence of an equal opportunities policy, as well as to the involvement of external consultants in recruitment, while it was negatively related to emphasis on the current job only in recruitment. All the variables have the expected signs and the model fits reasonably well.

A range of variables helped to explain the use of general ability tests in the logit regressions, as shown in Table 19. These included the involvement of local personnel staff in recruitment, and an emphasis on long term development in recruitment. The use of informal methods (word-of-mouth and speculative applications) and the use of recruitment agencies (which may be interpreted as suggesting that temporary workers/short-term contract workers

were recruited) reduced the likelihood of using general ability tests. The extent of the effort devoted to recruitment, as measured by the number of different recruitment methods, and whether or not there was evaluation of recruitment, was also significant.

The results of the logit regressions for literacy/numeracy testing are reported in Table 20. It is clear that the extent of commitment to equal opportunities exerts an influence on the use of literacy/numeracy tests. The probability of using this type of test was reduced for those organisations which focused solely on the current vacancy in recruitment and by the use of informal methods in recruitment.

For tests of specific skills, (Table 21) only two variables were significant in the final model. These were, firstly, economic sector, with those in the public sector significantly more likely to draw on these tests than private manufacturing. A focus on exact skills appeared to lower the probability of using these tests. This is not easily explained, although it should be noted that the variable was only significant at the ten per cent level, and that the model does not fit well – the pseudo-R^2 is less than five per cent.

The analysis of the CIPD data provides further confirmation of one of the main findings of the investigation of the WERS data, namely that there is variation in the factors which determine test use, according to the type of test under consideration. The notion that each kind of test can be explained by the same set of variables is strongly rejected in the data. Rather, each type of test – personality, general ability, literacy/numeracy, specific skills - was explained by a different set of independent variables. Also in accordance with the WERS results, size and sector which have been emphasised in previous research in this field were not of overwhelming importance. In the logit regression results organisation size was insignificant as a factor in the explanation of general ability testing, literacy/numeracy testing and test of specific skills although it did show up as important in the regressions for personality test use and overall test use. As for sector it was only important in the logit for specific skills. The role of line managers appears unimportant, as does central personnel involvement in recruitment. The labour market variable reflecting whether there were difficulties in recruitment was also not significant in any regressions. Certain variables did prove important in several though not all of the regressions. Equal opportunities variables were significant determinants of several different kinds of tests, as were variables reflecting long-termism in recruitment.

10. Conclusion

The results provide support for our general approach to the question of the determinants of test use. In analysis of data from the 1998 WERS, a range of economic factors and workplace characteristics had significant effects on the probability of use of both personality and competency tests. This was the case even when a full set of controls for the size of the workplace, and the sector in which it operated were applied. Among the main findings were that those establishments which provided high levels of formal off-the-job training for employees in the largest occupational group in the workplace were significantly more likely to use personality tests as part of the hiring process than those which provided only little or no training. The broader measure of workplace commitment to training, investor-in-people status, was also found to be a significant influence on personality testing. We found no evidence of a relationship between the training variables and the use of competency tests. This suggests that one motivation for the use of personality tests is to assess how suitable job applicants are for further training, while the use of competency tests may well imply an expectation on the part of the employer that applicants already possess the necessary skills to perform the job adequately.

Workplaces that reported managerial and professional vacancies were also more likely to use personality tests for selection compared to other workplaces, while those reporting vacancies for routine unskilled manual occupations were less likely to use personality tests. Workplaces with craft and technical vacancies were markedly more likely to report that competency tests formed part of the selection process.

Relationships were also uncovered between the use of selection tests and a number of the variables measuring organisational characteristics. The use of personality and competency tests were both clearly associated with the extent to which workplaces practised a range of formal policies to promote/ensure equal opportunities in the workplace. In addition, the use of competency tests was directly associated with the presence of formal grievance procedures and whether there had been complaints by employees to industrial tribunals in the recent past. It is plausible to suppose, then, that there is a relationship between test use and the degree of formalisation of procedures in the workplace more generally (Marsden, 1994; Ramsay et al, 2000).

Workplaces in the private sector were significantly more likely than public sector workplaces to use personality tests, but there was no such relationship for competency tests.

While the theoretical literature on test use suggests that public sector organisations are more likely to use tests in general, it may be that some of the well-known debate about the validity of personality tests for predicting performance in work has led public sector organisations to be sceptical about their usefulness (Blinkhorn and Johnson, 1990; Tett et al, 1991).

Once the economic factors and workplace characteristics have been introduced into the modelling, the role of establishment size and whether or not the workplace belonged to a larger organisation became markedly less important and sometimes were insignificant. Of course, this does not necessarily imply that workplace size has no role to play. For example, it may well be that characteristics such as an equal opportunities policy or the presence of a personnel specialist are more common in larger establishments.

Some variables which theory suggests might be important did not turn out to be significant for either type of test in our analysis. There was no evidence that union recognition had any significant impact on test use although the close link between public sector status and union recognition made it more difficult to disentangle the role of unionisation on the use of selection tests. Previous work on a US dataset by Marsden (1994) found that unionisation had a positive effect on skills tests, but was not significant for cognitive ability tests, while Cohen and Pfeffer's (1986) study, using a less representative dataset suggested that unionisation had a negative impact on the use of selection tests. It must be acknowledged, then, that the role played by unionisation on test use remains uncertain. Surprisingly, too, analysis of the WERS sample found that the presence of a personnel specialist in the workplace did not help to explain test use once other factors had been controlled for. However, it may be that it was strongly correlated with other aspects of the approach to, and degree of formality of, the human resource function, such as the extent of equal opportunities practices which did play an important role in the analysis.

In the WERS data the regression results for personality tests and for competency tests were quite different, while there were also differences among the main determinants of the various types of test – personality, general ability, literacy/numeracy, specific skills – in the CIPD survey data. This suggests that the underlying determinants of the various types of tests were not the same. This is in line with what might be expected since, for example, personality tests are likely to be expensive, draw on external consultants, and require considerable training to use properly while some competency tests, at least, will be quite straightforward tests designed in-house, such as word-processing tests. There is very little published information in this area, although Marsden (1994) also found differences in the factors determining the use of skills tests and cognitive ability tests in his analysis of US data.

It is plausible, then, to suppose that there might be variation in the determinants of the various different kinds of tests used for selection purposes, although this is a topic on which further research would be valuable.

In conclusion, the results reported here strongly support the idea that focusing on workplace size and sector, as many previous studies have done, often because of data limitations, will omit many important variables and not provide an accurate picture of the reasons why tests are utilised. It is clear that examining the influence of various economic factors and workplace characteristics can help to improve our explanations of why selection tests are utilised by some employers and not by others.

Table 1: Summary of Main Influences on Test Use

List of Explanatory Factors	Direction of Influence on Test Use
Economic Factors	
Salary	+
Establishment Size	+
Part of larger Organisation	+
Training Costs	+
Short-term contracts	-
Ease of Firing	-
Monitoring Costs	+
Variation in applicants' productivity	+
Local unemployment rate	+/-
Organisational Characteristics	
Private sector	-
Unionisation	+
Personnel Function	+
Age of Workplace	+
Commitment to Equal Opportunities	+
Grievance Procedures	+
Internal labour market	+

Table 2: Descriptive Statistics for the WERS 98 Dataset

Weighted Counts

		PERSONALITY TESTS						COMPETENCY TESTS					
		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
		N	%	N	%	N	%	N	%	N	%	N	%
Establishment Size (Number of Employees)													
ESIZE0 (10 to 24 employees)		913	83.3	183	16.7	1095	100.0	623	56.9	471	43.1	1094	100.0
ESIZE1 (25 to 49 employees)		477	83.1	97	16.9	575	100.0	307	53.5	267	46.5	575	100.0
ESIZE2 (50 to 99 employees)		216	78.8	58	21.2	274	100.0	120	43.9	154	56.1	274	100.0
ESIZE3 (100 to 199 employees)		98	73.2	36	26.8	134	100.0	52	38.6	82	61.4	134	100.0
ESIZE4 (200 to 499 employees)		49	58.4	35	41.6	84	100.0	31	37.4	53	62.6	84	100.0
ESIZE5 (500 or more employees)		13	45.6	16	54.4	29	100.0	8	26.2	21	73.8	29	100.0
TOTAL		1767	80.6	424	19.4	2191	100.0	1141	52.1	1048	47.9	2189	100.0
Training: Proportion of employees in largest occupational group received training in previous 12 months													
SMTRNHI (High proportion, 80% to 100%)													
	0	1335	82.5	284	17.5	1619	100.0	863	53.3	755	46.7	1618	100.0
	1	419	75.1	139	24.9	557	100.0	272	48.8	286	51.2	557	100.0
Total		1754	80.6	423	19.4	2176	100.0	1135	52.2	1040	47.8	2175	100.0
SMTRNMD (medium proportion, 40% to 79%)													
	0	1509	83.0	310	17.0	1818	100.0	986	54.2	833	45.8	1818	100.0
	1	245	68.4	113	31.6	358	100.0	149	41.7	208	58.3	356	100.0
Total		1754	80.6	423	19.4	2176	100.0	1135	52.2	1040	47.8	2175	100.0
SMTRNLO (low proportion, 1% to 39%)													
	0	1138	79.1	301	20.9	1439	100.0	739	51.4	698	48.6	1437	100.0
	1	616	83.5	122	16.5	738	100.0	396	53.7	342	46.3	738	100.0
Total		1754	80.6	423	19.4	2176	100.0	1135	52.2	1040	47.8	2175	100.0
IPSTAT (Investors in People Status)													
	0	1152	83.0	237	17.0	1388	100.0	724	52.2	664	47.8	1388	100.0
	1	535	75.0	178	25.0	713	100.0	362	50.8	351	49.2	712	100.0

Total		1686	80.3	414	19.7	2101	100.0	1086	51.7	1014	48.3	2101 100.0

LTERM (Expectation of long term employment in the workplace)   1   Total

	0	398	81.1	93	18.9	491	100.0	279	56.8	212	43.2	491 100.0
	1	1369	80.5	331	19.5	1700	100.0	862	50.8	836	49.2	1698 100.0
Total		1767	80.6	424	19.4	2191	100.0	1141	52.1	1048	47.9	2189 100.0

STCON1 (some employees on short term contracts of less than one year's duration)

	0	1341	82.2	290	17.8	1631	100.0	890	54.6	741	45.4	1631 100.0
	1	426	76.1	134	23.9	560	100.0	251	45.0	307	55.0	558 100.0
Total		1767	80.7	424	19.3	2190	100.0	1141	52.1	1048	47.9	2189 100.0

STCON2 (some employees on short term contracts of one year or more)

	0	1478	80.7	353	19.3	1831	100.0	999	54.6	830	45.4	1829 100.0
	1	288	80.1	71	19.9	359	100.0	141	39.2	218	60.8	359 100.0
Total		1766	80.6	424	19.4	2190	100.0	1140	52.1	1048	47.9	2188 100.0

JGUARNT (Guaranteed job security for at least one occupational group)

	0	1579	81.3	364	18.7	1942	100.0	1022	52.6	920	47.4	1942 100.0
	1	183	75.9	58	24.1	241	100.0	114	47.6	125	52.4	239 100.0
Total		1761	80.7	422	19.3	2183	100.0	1136	52.1	1046	47.9	2181 100.0

Unemployment (local unemployment rate in travel to work area)

UNEMP1 (0 to 2%)	137	80.0	34	20.0	171	100.0	83	48.7	88	51.3	171 100.0
UNEMP2 (2 to 3%)	258	80.4	63	19.6	320	100.0	192	59.9	128	40.1	320 100.0
UNEMP3 (3 to 5%)	511	78.4	141	21.6	652	100.0	346	53.1	306	46.9	652 100.0
UNEMP4 (5 to 7 %)	591	80.1	147	19.9	737	100.0	339	46.1	397	53.9	736 100.0
UNEMP5 (7 to 7.75%)	173	84.2	32	15.8	205	100.0	104	51.0	100	49.0	205 100.0
UNEMP6 (more than 7.75%)	99	93.6	7	6.4	105	100.0	76	72.2	29	27.8	105 100.0
TOTAL	1767	80.6	424	19.4	2191	100.0	1141	52.1	1048	47.9	2189 100.0

Type of Vacancies Arising in the Previous 12 months

CVAC1 (managerial)	524	71.7	207	28.3	730	100.0	349	47.8	381	52.2	730 100.0
CVAC2 (professional)	512	79.5	132	20.5	644	100.0	314	48.7	330	51.3	644 100.0
CVAC3 (technical)	294	82.0	78	21.8	376	100.0	135	35.8	241	64.2	376 100.0
CVAC4 (clerical)	732	76.7	223	23.3	955	100.0	411	43.1	543	56.9	953 100.0

CVAC5 (craft/skilled)		451	81.1	105	18.9	557	100.0	256	46.0	301	54.0	557 100.0
CVAC6 (personal service)		277	83.7	54	16.3	331	100.0	187	56.5	144	43.5	331 100.0
CVAC7 (sales)		458	74.5	156	25.5	614	100.0	336	54.8	276	45.2	612 100.0
CVAC8 (operative/assembly)		257	78.1	72	21.9	329	100.0	190	57.7	139	42.3	329 100.0
CVAC9 (routine unskilled)		574	84.5	105	15.5	679	100.0	372	54.8	307	45.2	679 100.0
CVAC10 (none)		114	82.5	24	17.5	138	100.0	72	52.0	66	48.0	138 100.0

PRPAY (some employees receiving performance-related pay)

	0	1499	83.6	293	16.4	1792	100.0	985	55.0	806	45.0	1791 100.0
	1	267	67.1	131	32.9	398	100.0	156	39.4	240	60.6	396 100.0
Total		1765	80.6	424	19.4	2189	100.0	1141	52.2	1046	47.8	2187 100.0

	Non-Test Users		Test Users		N		Non-Test Users		Test Users		N
	Mean	Std. Err.	Mean	Std. Err.			Mean	Std. Err.	Mean	Std. Err.	
HISAL (% employees earning > £22,000 pa)	0.357	0.014	0.385	0.028	2143		0.328	0.017	0.399	0.018	2142

Proportions in occupational groups

	Mean	Std. Err.	Mean	Std. Err.	N		Mean	Std. Err.	Mean	Std. Err.	N
NMNGPC (% managers)	10.752	0.508	12.313	1.245	2128		11.129	0.738	10.980	0.581	2127
NPROPC (% professionals)	14.207	0.805	7.674	1.180	2130		12.484	1.030	13.447	1.124	2129
NTECPC (% technical staff)	5.353	0.619	5.354	0.790	2144		3.756	0.445	7.115	0.960	2143
NCLEPC (% clerical staff)	14.544	0.837	19.340	2.020	2114		12.026	0.886	19.261	1.346	2113
NSALPC (% sales staff)	12.500	1.117	18.007	2.714	2153		16.364	1.631	10.354	1.345	2152
NOPEPC (% operative/assembly)	7.333	0.799	10.716	1.960	2141		7.714	0.924	8.291	1.255	2140
NROUPC (% routine unskilled)	12.403	0.878	9.178	1.494	2129		14.112	1.250	9.245	0.838	2128

		PERSONALITY TESTS						COMPETENCY TESTS					
		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	

PERSPEC (personnel specialist at the workplace)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
	0	726	86.5	113	13.5	839	100.0	495	59.0	344	41.0	839	100.0
	1	1041	77.0	311	23.0	1352	100.0	646	47.8	704	52.2	1350	100.0
Total		1767	80.6	424	19.4	2191	100.0	1141	52.1	1048	47.9	2189	100.0

PUBSCT (public sector workplace)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
	0	1312	79.7	335	20.3	1647	100.0	912	55.4	733	44.6	1645	100.0
	1	455	83.6	89	16.4	544	100.0	229	42.1	315	57.9	544	100.0
Total		1767	80.6	424	19.4	2191	100.0	1141	52.1	1048	47.9	2189	100.0

EQOPP (equal opportunities policy at the workplace)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
	0	624	88.0	85	12.0	709	100.0	428	60.4	280	39.6	709	100.0
	1	1122	76.8	339	23.2	1461	100.0	694	47.5	766	52.5	1459	100.0
Total		1745	80.4	424	19.6	2170	100.0	1122	51.7	1046	48.3	2168	100.0

ZPRAC (policies for promoting diversity, score between zero and six)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
0		954	87.7	134	12.3	1088	100.0	687	63.2	400	36.8	1087	100.0
1		328	80.5	79	19.5	407	100.0	190	46.7	217	53.3	407	100.0
2		201	77.7	58	22.3	259	100.0	108	41.7	151	58.3	259	100.0
3		95	63.7	54	36.3	149	100.0	73	49.2	76	50.8	149	100.0
4		67	62.7	40	37.3	106	100.0	26	24.7	80	75.3	106	100.0
5		64	72.5	24	27.5	88	100.0	29	33.1	59	66.9	88	100.0
6		58	62.9	34	37.1	92	100.0	27	28.8	65	71.2	92	100.0
Total		1767	80.7	423	19.3	2190	100.0	1140	52.1	1048	47.9	2188	100.0

HCOMP1 (any complaints to industrial tribunals in the previous twelve months)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
	0	1655	81.7	370	18.3	2025	100.0	1084	53.6	939	46.4	2024	100.0
	1	107	67.2	53	32.8	160	100.0	54	34.0	106	66.0	160	100.0
Total		1762	80.7	423	19.3	2185	100.0	1138	52.1	1045	47.9	2183	100.0

HPROC (formal procedure for dealing with grievances)

		Non-Test Users		Test Users		All		Non-Test Users		Test Users		All	
	0	229	90.1	25	9.9	254	100.0	183	72.1	71	27.9	254	100.0

	1	1537	79.4	399	20.6	1936	100.0	958	49.5	976	50.5	1934	100.0
Total		1766	80.6	424	19.4	2190	100.0	1141	52.1	1047	47.9	2188	100.0

UR (union recognised at the workplace)

	0	1084	81.6	244	18.4	1328	100.0	755	56.9	572	43.1	1328	100.0
	1	669	79.0	178	21.0	847	100.0	377	44.5	469	55.5	846	100.0
Total		1753	80.6	422	19.4	2175	100.0	1132	52.1	1041	47.9	2173	100.0

INTLAB (workplace operates an internal labour market)

	0	1319	81.2	305	18.8	1624	100.0	853	52.6	769	47.4	1622	100.0
	1	426	78.2	119	21.8	545	100.0	272	49.8	274	50.2	545	100.0
Total		1745	80.5	424	19.5	2169	100.0	1124	51.9	1043	48.1	2167	100.0

Workplace Age (length of time workplace at current address)

CESTAGE1 (0 to 4 years)		299	84.6	54	15.4	353	100.0	184	52.1	169	47.9	353	100.0
CESTAGE2 (5 to 9 years)		330	76.8	100	23.2	430	100.0	232	54.0	198	46.0	430	100.0
CESTAGE3 (10 to 24 years)		536	82.3	115	17.7	651	100.0	290	44.5	361	55.5	651	100.0
CESTAGE4 (25 or more years)		581	79.3	152	20.7	733	100.0	421	57.4	312	42.6	734	100.0
Total		1747	80.6	421	19.4	2168	100.0	1128	52.0	1040	48.0	2168	100.0

Industrial Sector

ASIC1 (Manufacturing)		242	84.57	44	15.4	287	100.0	136	47.41	151	52.6	287	100.0
ASIC2 (Electricity,gas,water)		1	18.22	4	81.8	5	100.0	1	27.81	3	72.2	5	100.0
ASIC3 (Construction)		83	90.34	9	9.7	92	100.0	61	66.56	31	33.4	92	100.0
ASIC4 (Wholesale/retail)		317	75.30	104	24.7	421	100.0	262	62.25	159	37.8	421	100.0
ASIC5 (Hotels/restaurants)		137	81.04	32	19.0	169	100.0	121	71.37	48	28.6	169	100.0
ASIC6 (Transprt/communication)		76	76.45	23	23.5	99	100.0	37	37.25	62	62.8	99	100.0
ASIC7 (Financial services)		32	47.82	35	52.2	68	100.0	19	28.94	47	71.1	66	100.0
ASIC8 (Other business services)		201	81.61	45	18.4	247	100.0	111	45.03	136	55.0	247	100.0
ASIC9 (Public administration)		83	79.68	21	20.3	104	100.0	25	23.65	79	76.3	104	100.0
ASIC10 (Education)		257	90.68	26	9.3	283	100.0	142	50.27	141	49.7	283	100.0
ASIC11 (Health)		247	80.73	59	19.3	305	100.0	168	55.06	137	44.9	305	100.0
ASIC12 (Other community services)		91	81.36	21	18.6	111	100.0	58	51.64	54	48.4	111	100.0
TOTAL		1767	109.12	424	26.2	2191	100.0	1141	1141.01	1048	1048.3	2189	100.0

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Table 3a: Effects of Establishment Size on Personality Test Use
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-1.609	0.188	0.000	***
Workplace Size (Base Category 10-24 employees)				
25-49 employees	0.017	0.266	0.950	
50-99 employees	0.294	0.231	0.204	
100-199 employees	0.602	0.225	0.007	***
200-499 employees	1.268	0.216	0.000	***
500 plus employees	1.784	0.227	0.000	***

Number of Observations	2189
% "Correctly" Predicted	68.799
% Test Users "Correctly" Predicted	22.893
% Non-Test Users "Correctly" Predicted	90.928

Table 3b: Effects of Establishment Size and Whether Part of
Larger Organisation on Personality Test Use
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-1.806	0.278	0.000	***
Workplace Size (Base Category 10-24 employees)				
25-49 employees	0.008	0.266	0.977	
50-99 employees	0.277	0.231	0.231	
100-199 employees	0.571	0.224	0.011	**
200-499 employees	1.217	0.215	0.000	***
500 plus employees	1.742	0.226	0.000	***
Part of Larger Organisation	0.287	0.247	0.246	

Number of Observations	2189
% "Correctly" Predicted	69.210
% Test Users "Correctly" Predicted	20.084
% Non-Test Users "Correctly" Predicted	92.891

Variables dropped at this stage: Part of Larger Organisation

*   Significant at 10% level
** Significant at 5% level
*** Significant at 1% level

**Table 4: Effect of Economic Variables on the Use of Personality Tests
Survey Logit Regression**

	Coef.	Std. Err.	P>|t|	
CONSTANT	-2.504	0.446	0.000	***
Training: % in LOG received training				
High (80 to 100 %)	1.189	0.365	0.001	***
Medium (40 to 79 %)	1.504	0.388	0.000	***
Low (1 to 39 %)	0.454	0.358	0.204	
Investor in People	0.457	0.224	0.042	**
Short term contracts (< 1 year)	0.388	0.227	0.087	
% Professional in Workplace	-0.031	0.008	0.000	***
% Operatives in Workplace	0.015	0.006	0.012	**
Type of Vacancies				
Managerial	0.561	0.210	0.008	***
Professional	0.740	0.293	0.012	**
Technical	-0.247	0.261	0.344	
Clerical	0.162	0.229	0.479	
Craft/Skilled	-0.155	0.253	0.539	
Personal Service	-0.349	0.300	0.246	
Sales	0.252	0.239	0.292	
Operative	-0.464	0.372	0.212	
Routine unskilled	-0.419	0.220	0.057	*
Unemployment rate in ttwa				
2 to 3 %	-0.098	0.421	0.816	
3 to 5 %	0.103	0.358	0.774	
5 to 7 %	-0.239	0.357	0.503	
7 to 7.75 %	-0.485	0.486	0.319	
more than 7.75 %	-1.661	0.647	0.010	***
Workers on PRP	0.560	0.260	0.031	**

Number of Observations	2011
% Correctly Predicted	70.264
% Test Users Correctly Predicted	22.818
% Non-Test Users Correctly Predicted	93.078

* Significant at 10% level, ** 5 % level, *** 1 % level

Variables dropped at this stage:
Expectation of long term employment
Job guarantees
Short term contracts (> 1 year)
% in occupational groups: managerial, technical, clerical, sales, routine unskilled,
% earning higher salaries (> £22,000)

Table 5: Effects of Organisational Characteristics on Personality Test Use
Survey Logit Regression

	Coef.	Std. Err.	P>|t|
Constant	-2.639	0.308	0.000 ***
Public sector workplace	-1.123	0.272	0.000 ***
Equal Opportunities Policy	0.795	0.276	0.004 ***
No of Diversity Promoting Practices (0 to 6)	0.304	0.060	0.000 ***
Tribunal Complaint in last year	0.574	0.261	0.028 **
Workplace age (time at current address, base 0 to 4 yrs)			
5 to 9 years	0.547	0.329	0.097 *
10 to 24 years	0.237	0.320	0.460
25 or more years	0.644	0.299	0.032 **

Number of Observations	2133
% "Correctly" Predicted	71.074
% Test Users "Correctly" Predicted	20.893
% Non-Test Users "Correctly" Predicted	95.274

* Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
Internal labour markets
Presence of grievance procedures
Union recognition
Presence of personnel Department

Table 6: Combined Effect of Economic Variables, Organisational Characteristics and Establishment Size on the Use of Personality Test Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-3.000	0.508	0.000	***
Workplace Size (base is 10 to 24 employees)				
25 to 49 Employees	-0.132	0.281	0.640	
50 to 99 Employees	-0.056	0.278	0.839	
100 to 199 Employees	0.058	0.303	0.849	
200 to 499 Employees	0.235	0.322	0.466	
More Than 500 Employees	0.674	0.375	0.072	*
Training (% in LOG received training)				
High (80 to 100 %)	0.998	0.380	0.009	***
Medium (40 to 79 %)	1.432	0.410	0.000	***
Low (1 to 39 %)	0.320	0.362	0.377	
Investor in People	0.502	0.226	0.027	**
Short term contracts (< 1 year)	0.414	0.254	0.104	
% Professional in Workplace	-0.031	0.007	0.000	***
% Operatives in Workplace	0.016	0.007	0.023	**
Type of Vacancies				
Managerial	0.536	0.221	0.015	**
Professional	0.688	0.293	0.019	**
Technical	-0.272	0.272	0.317	
Clerical	0.020	0.239	0.934	
Craft/Skilled	-0.252	0.266	0.343	
Personal Service	-0.442	0.307	0.150	
Sales	0.119	0.253	0.638	
Operative	-0.536	0.379	0.157	
Routine unskilled	-0.509	0.221	0.021	**
Unemployment rate in ttwa				
2 to 3 %	-0.127	0.412	0.759	
3 to 5 %	0.097	0.361	0.789	
5 to 7 %	-0.271	0.364	0.456	
7 to 7.75 %	-0.435	0.499	0.384	
more than 7.75 %	-1.583	0.568	0.005	***
Workers on PRP	0.484	0.281	0.086	*
Public sector workplace	-0.607	0.322	0.059	*
No of Diversity Promoting Practices (0 to 6)	0.237	0.062	0.000	***
Workplace age (time at current address, base 0 to 4 yrs)				
5 to 9 years	0.951	0.356	0.008	***
10 to 24 years	0.407	0.326	0.212	
25 or more years	0.906	0.329	0.006	***

Number of Observations	1983
% "Correctly" Predicted	72.869
% Test Users "Correctly" Predicted	43.079
% Non-Test Users "Correctly" Predicted	87.164

* Significant at 10% level, ** 5% level, *** 1% level
Variables dropped at this stage:
Complaints to Tribunal in last year
Equal Opportunities Policy

**Table 7: Combined Effect of Economic Variables,
Organisational Characteristics, Establishment Size and
Industrial Sector on the Use of Personality Tests
Survey Logit Regression**

	Coef.	Std. Err.	P>|t|	
Constant	-3.763	0.548	0.000	***
Workplace Size (base is 10 to 24 employees)				
25 to 49 Employees	-0.162	0.281	0.564	
50 to 99 Employees	-0.025	0.274	0.929	
100 to 199 Employees	0.118	0.298	0.692	
200 to 499 Employees	0.271	0.325	0.405	
More Than 500 Employees	0.659	0.370	0.075	*
Training (% in LOG received training)				
High (80 to 100 %)	0.972	0.383	0.011	**
Medium (40 to 79 %)	1.398	0.424	0.001	***
Low (1 to 39 %)	0.285	0.360	0.429	
Investor in People	0.500	0.214	0.020	**
Short term contracts (< 1 year)	0.458	0.246	0.062	*
% Professional in Workplace	-0.029	0.008	0.001	***
% Operatives in Workplace	0.021	0.007	0.002	***
Type of Vacancies				
Managerial	0.554	0.218	0.011	**
Professional	0.754	0.295	0.011	**
Technical	-0.325	0.290	0.262	
Clerical	0.036	0.240	0.882	
Craft/Skilled	-0.018	0.284	0.949	
Personal Service	-0.547	0.359	0.128	
Sales	0.216	0.287	0.453	
Operative	-0.451	0.364	0.214	
Routine unskilled	-0.501	0.219	0.022	**
Unemployment rate in ttwa				
2 to 3 %	-0.101	0.420	0.810	
3 to 5 %	0.068	0.358	0.850	
5 to 7 %	-0.352	0.356	0.323	
7 to 7.75 %	-0.479	0.464	0.302	
more than 7.75 %	-1.818	0.598	0.002	***
No of Diversity Promoting Practices (0 to 6)	0.228	0.062	0.000	***
Workplace age (time at current address, base 0 to 4 yrs)				
5 to 9 years	0.927	0.341	0.007	***
10 to 24 years	0.387	0.325	0.234	
25 or more years	0.993	0.313	0.002	***

Industrial Sector (base, manufacturing)
Electricity, Gas, water   2.746 0.608 0.000 ***
Construction   0.083 0.431 0.847
Wholesale & Retail   0.880 0.370 0.017 **
Hotels & Restaurants   0.563 0.468 0.229
Transport & Communication   0.832 0.584 0.154
Financial Services   1.651 0.762 0.030 **
Other Business Services   0.827 0.413 0.045 **
Public Administration   -0.156 0.571 0.785
Education   -0.186 0.629 0.768
Health   1.041 0.539 0.053 *
Other Community Services   0.231 0.719 0.748

Number of Observations   1984

% Correctly Predicted   73.085
% Test Users Correctly Predicted   45.257
% Non-Test Users Correctly Predicted   86.428

* Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
Public Sector Workplace
Workers on PRP

Table 8a: Effects of Establishment Size on Competency Test Use
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-0.279	0.141	0.048	**
Workplace Size (No of Employees, base 10 to 24 employees)				
25 to 49 employees	0.139	0.194	0.475	
50 to 99 employees	0.524	0.184	0.004	***
100 to 199 employees	0.741	0.185	0.000	***
200 to 499 employees	0.794	0.179	0.000	***
500 or more employees	1.315	0.202	0.000	***

Number of Observations	2188
% "Correctly" Predicted	61.563
% Test Users "Correctly" Predicted	76.703
% Non-Test Users "Correctly" Predicted	39.732

Table 8b: Effects of Establishment Size & Part of Larger Organisation on Competency Test Use
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-0.379	0.202	0.061	*
25 to 49 employees	0.134	0.194	0.488	
50 to 99 employees	0.514	0.184	0.005	***
100 to 199 employees	0.723	0.184	0.000	***
200 to 499 employees	0.765	0.179	0.000	***
500 or more employees	1.290	0.202	0.000	***
Workplace part of larger organisation	0.151	0.190	0.427	

Number of Observations	2188
% "Correctly" Predicted	61.563
% Test Users "Correctly" Predicted	76.703
% Non-Test Users "Correctly" Predicted	39.732

*   Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
Workplace part of larger organisation

Table 9: Effect of Economic Variables on the Use of Competency Tests
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-0.530	0.198	0.007	***
Fixed/Short term contracts (> 1 year)	0.650	0.226	0.004	***
% Clerical in Workplace	0.011	0.005	0.028	**
% Routine Unskilled in Workplace	-0.011	0.005	0.027	**
Workers on PRP	0.590	0.242	0.015	**
Type of Vacancies				
Managerial	0.118	0.180	0.513	
Professional	-0.131	0.209	0.530	
Technical	0.585	0.241	0.015	**
Clerical	0.255	0.207	0.219	
Craft/Skilled	0.456	0.209	0.029	**
Personal Service	-0.082	0.250	0.743	
Sales	-0.318	0.200	0.112	
Operative	-0.408	0.265	0.123	
Routine unskilled	0.065	0.237	0.782	

Number of Observations	2075
% "Correctly" Predicted	61.735
% Test Users "Correctly" Predicted	65.249
% Non-Test Users "Correctly" Predicted	56.690

* Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
Training variables, % managers, professionals, technical,
sales, operatives, expectations of long term employment,
short term contracts (< 1 year), job guarantees,
all unemployment variables

Table 10: Effects Of Organisational Characteristics On Competency Test Use Survey Logit Regression

	Coef.	Std. Err.	t	P>|t|
Constant	-1.041	0.327	-3.180	0.001 ***
No of Diversity Promoting Practices (0-6)	0.238	0.049	4.890	0.000 ***
Grievance Procedures	0.686	0.344	2.000	0.046 **
Complaints to Tribunal in last Year	0.614	0.193	3.190	0.001 ***

Number of Observations	2168
% Correctly Predicted	62.223
% Test Users Correctly Predicted	69.038
% Non-Test Users Correctly Predicted	52.418

*   Significant at 10% level,** 5% level,*** 1% level

Variables dropped at this stage:
Internal Labour Markets
Union Recognition
Presence of a Personnel Specialist
Public Sector Workplace
Equal Opportunities Policy
Workplace Age (Time at Current Address)

Table 11: Combined Effect of Economic Variables, Organisational Characteristics and Establishment Size on the Use of Competency Tests
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-1.400	0.360	0.000	***
Fixed/Short term contracts (> 1 year)	0.544	0.244	0.026	**
% Clerical in Workplace	0.012	0.005	0.024	**
% Routine Unskilled in Workplace	-0.010	0.005	0.042	**
Workers on PRP	0.453	0.231	0.050	**
Type of Vacancies				
Managerial	-0.023	0.182	0.897	
Professional	-0.217	0.217	0.317	
Technical	0.578	0.250	0.021	**
Clerical	0.181	0.202	0.372	
Craft/Skilled	0.601	0.216	0.005	***
Personal Service	-0.180	0.256	0.482	
Sales	-0.350	0.200	0.080	*
Operative	-0.472	0.268	0.079	*
Routine unskilled	0.039	0.236	0.870	
No of Diversity Promoting Practices (0-6)	0.216	0.053	0.000	***
Grievance Procedures	0.774	0.343	0.024	**
Complaints to Tribunal in last Year	0.563	0.216	0.009	***

Number of Observations	2059
% "Correctly" Predicted	65.226
% Test Users "Correctly" Predicted	73.394
% Non-Test Users "Correctly" Predicted	53.491

* Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
Workplace Size Variables

Table 12: Combined Effect of Economic Variables, Organisational Characteristics, Establishment Size and Industrial Sector on the Use of Competency Tests
Survey Logit Regression

	Coef.	Std. Err.	P>|t|	
Constant	-0.903	0.474	0.057	*
Fixed/Short term contracts (> 1 year)	0.483	0.255	0.058	*
% Routine Unskilled in Workplace	-0.011	0.005	0.019	**
Workers on PRP	0.492	0.244	0.044	**
Type of Vacancies				
Managerial	0.029	0.185	0.875	
Professional	-0.290	0.225	0.198	
Technical	0.486	0.248	0.050	**
Clerical	0.302	0.196	0.124	
Craft/Skilled	0.562	0.205	0.006	***
Personal Service	-0.166	0.272	0.542	
Sales	-0.144	0.232	0.534	
Operative	-0.716	0.297	0.016	**
Routine unskilled	0.091	0.229	0.691	
No of Diversity Promoting Practices (0-6)	0.213	0.054	0.000	***
Grievance Procedures	0.691	0.339	0.041	**
Complaints to Tribunal in last Year	0.455	0.224	0.042	**
Industrial Sector (base, manufacturing)				
Electricity, Gas, water	-0.116	0.528	0.826	
Construction	-0.735	0.501	0.142	
Wholesale & Retail	-0.748	0.381	0.050	**
Hotels & Restaurants	-0.954	0.452	0.035	**
Transport & Communication	0.497	0.517	0.337	
Financial Services	0.344	0.519	0.507	
Other Business Services	-0.094	0.411	0.819	
Public Administration	0.625	0.482	0.195	
Education	-0.183	0.455	0.687	
Health	-0.392	0.447	0.381	
Other Community Services	-0.010	0.474	0.983	

Number of Observations   2101

% "Correctly" Predicted	65.731
% Test Users "Correctly" Predicted	74.798
% Non-Test Users "Correctly" Predicted	52.723

* Significant at 10% level, ** 5% level, *** 1% level

Variables dropped at this stage:
% Clerical Workers

Table 13: Proportion Using Selection Tests In CIPD Dataset: % of All Respondents

Selection tests	
Tests of specific skills	60.1
General ability tests	54.5
Literacy/numeracy tests	44.6
Personality questionnaires	40.7

Table 14: Test Use by Type of Employee in the CIPD Dataset

	Professionals	Managers	Skilled manual
Specific skills	45.8	29.6	33.6
General ability	37.9	30.4	33.6
Literacy/numeracy	30.0	25.3	23.3
Personality	26.1	38.7	9.1

Table 15: Changes in Test Use in the Last Two Years in CIPD Dataset

	Personality questionnaires		General ability tests		Literacy/ numeracy tests		Tests of specific skills	
	N	%	N	%	N	%	N	%
Increased use	37	27.0	40	24.8	27	18.4	40	24.0
Less use	11	8.0	8	5.0	10	6.8	6	3.6
About the same	70	51.1	100	62.1	92	62.6	104	62.3
Don't know	19	13.9	13	8.1	18	12.2	17	10.2
Total	137	100.0	161	100.0	147	100.0	167	100.0

Table 16: List of Explanatory Variables for CIPD Dataset

Factors influencing test use	Variable derived from CIPD data	Effect of Variable on Test Use
Organisation size	SIZE1: 50 to 99 employees SIZE2:100 to 199 employees SIZE3:200 to 499 employees SIZE4:500 + employees (SIZE1 is base category in regressions)	Increase
Broad Sector	BSECTOR1 :manufacturing BSECTOR2:services BSECTOR3:public sector (Manufacturing is the base category in regressions)	Vary according to type of test
Labour market	RECDIFF: dummy for experienced difficulties in filling vacancies in the last 12 months	Could increase or decrease
Equal opportunities	DIVERSE: dummy variable for any steps taken to promote diverse workforce EQCOMMIT: number of different practices for promoting diversity (0 to 6)	increase
Personnel involved in recruitment	PERFUNC: central and/or local personnel staff involved in recruitment PERLOCAL:local personnel staff involved in recruitment PERCNTRL: central personnel staff involved in recruitment PEREXTER: external consultants involved in recruitment	increase
Line managers	LMANAG: dummy variable for line managers involved in recruitment LINMAN:line managers involvement in recruitment 0=none; 1=some; 2=equal partner; 3 =leading role	No prediction
Time perspective	CURRVAC: current vacancy only LONGJOB: also think about more demanding jobs in the future	CURRVAC = Decrease & LONGJOB = increase
Role of skills	EXTSKIL: insist on exact skills when recruiting	Increase
Number of recruitment methods	RECNUM: no of recruitment methods. Minimum is zero, up to a maximum of 13 methods.	Increase
Use of informal recruitment methods	INFRMAL: dummy variable for use of informal methods (speculative applications or word of mouth) in recruitment	Decrease
Recruitment Agencies	RECAGEN: dummy variable for whether organisation uses recruitment agencies	Decrease
Evaluation	EVAL: dummy variable for evaluation of recruitment and selection	Increase

Table 17: Descriptive Statistics For the CIPD Dataset

	PERSONALITY TESTS						GENERAL ABILITY TESTS					
	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
Organisation Size												
50-99	30	78.95	8	21.05	38	100	22	57.89	16	42.11	38	100
100-199	25	54.35	21	45.65	46	100	23	50.00	23	50	46	100
200-499	42	61.76	26	38.24	68	100	32	47.76	35	52.24	67	100
500+	50	51.02	48	48.98	98	100	32	33.33	64	66.67	96	100
Total	147	58.80	103	41.2	250	100	109	44.13	138	55.87	247	100
Business Sector												
manufacturing	46	56.10	36	43.90	82	100	40	48.78	42	51.22	82	100
services	50	69.44	22	30.56	72	100	38	53.52	33	46.48	71	100
public sector	51	53.13	45	46.88	96	100	31	32.98	63	67.02	94	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Recruitment Difficulties												
No	71	61.21	45	38.79	116	100	54	47.37	60	52.63	114	100
Yes	76	56.72	58	43.28	134	100	55	41.35	78	58.65	133	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Policy for Promoting Diversity												
No	33	75.00	11	25.00	44	100	18	41.86	25	58.14	43	100
Yes	114	55.34	92	44.66	206	100	91	44.61	113	55.39	204	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100

	Non-test User		Test User				Non-test User		Test User	
	Mean	SD	Mean	SD			Mean	SD	Mean	SD
Number of Practices for Promoting Diversity										
	2.196	1.679	2.703	1.616			2.124	1.498	2.647	1.766

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
Personnel Function (Central or Local)												
No	17	65.38	9	34.62	26	100	15	57.69	11	42.31	26	100
Yes	130	58.04	94	41.96	224	100	94	42.53	127	57.47	221	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Personnel Function (Local)												
No	85	62.04	52	37.96	137	100	69	51.11	66	48.89	135	100
Yes	62	54.87	51	45.13	113	100	40	35.71	72	64.29	112	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Personnel Function (Central)												
No	35	59.32	24	40.68	59	100	27	46.55	31	53.45	58	100
Yes	112	58.64	79	41.36	191	100	82	43.39	107	56.61	189	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
External Consultants Used in Recruitment												
No	94	65.28	50	34.72	144	100	60	42.55	81	57.45	141	100
Yes	53	50.00	53	50.00	106	100	49	46.23	57	53.77	106	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Line Managers Involved in Recruitment												
No	13	68.42	6	31.58	19	100	7	38.89	11	61.11	18	100
Yes	134	58.01	97	41.99	231	100	102	44.54	127	55.46	229	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Extent of Line Manager Involvement in Recruitment												
None	14	70.00	6	30.00	20	100	7	36.84	12	63.16	19	100
Some	27	64.29	15	35.71	42	100	21	51.22	20	48.78	41	100
Equal Partner	57	57.00	43	43.00	100	100	40	40.00	60	60.00	100	100
Leading Role	47	55.29	38	44.71	85	100	40	47.06	45	52.94	85	100
Total	145	58.70	102	41.30	247	100	108	44.08	137	55.92	245	100
Focus on Current Vacancy Only												
No	75	51.37	71	48.63	146	100	57	39.31	88	60.69	145	100
Yes	66	68.75	30	31.25	96	100	48	51.06	46	48.94	94	100
Total	141	58.26	101	41.74	242	100	105	43.93	134	56.07	239	100
Also Consider More Demanding Future Roles (as well as current vacancy)												
No	97	61.01	62	38.99	159	100	74	47.44	82	52.56	156	100
Yes	44	53.01	39	46.99	83	100	31	37.35	52	62.65	83	100
Total	141	58.26	101	41.74	242	100	105	43.93	134	56.07	239	100
Exact Skills												
No	117	57.92	85	42.08	202	100	86	43.22	113	56.78	199	100
Yes	30	62.50	18	37.50	48	100	23	47.92	25	52.08	48	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Informal Recruitment Methods Used												
No	34	54.84	28	45.16	62	100	18	29.51	43	70.49	61	100
Yes	113	60.11	75	39.89	188	100	91	48.92	95	51.08	186	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Recruitment Agencies Used												
No	49	58.33	35	41.67	84	100	32	39.02	50	60.98	82	100
Yes	98	59.04	68	40.96	166	100	77	46.67	88	53.33	165	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100
Evaluation of Recruitment and Selection												
No	34	57.63	25	42.37	59	100	34	57.63	25	42.37	59	100
Yes	113	59.16	78	40.84	191	100	75	39.89	113	60.11	188	100
Total	147	58.80	103	41.20	250	100	109	44.13	138	55.87	247	100

	Non-test User		Test User			Non-test User		Test User	
	Mean	SD	Mean	SD		Mean	SD	Mean	SD
Number of Recruitment Methods									
	6.544	2.212	7.039	1.955		6.505	2.124	6.935	2.114

LITERACY AND NUMERACY TESTS   **TESTS OF SPECIFIC SKILLS**

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
Organisation Size												
50-99	27	71.05	11	28.95	38	100	16	41.03	23	58.97	39	100
100-199	32	69.57	14	30.43	46	100	16	34.78	30	65.22	46	100
200-499	34	50.75	33	49.25	67	100	29	43.28	38	56.72	67	100
500+	43	43.88	55	56.12	98	100	36	37.11	61	62.89	97	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Business Sector												
manufacturing	52	63.41	30	36.59	82	100	34	41.46	48	58.54	82	100
services	44	61.97	27	38.03	71	100	37	51.39	35	48.61	72	100
public sector	40	41.67	56	58.33	96	100	26	27.37	69	72.63	95	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Recruitment Difficulties												
No	70	60.34	46	39.66	116	100						
Yes	66	49.62	67	50.38	133	100	48	41.74	67	58.26	115	100
Total	136	54.62	113	45.38	249	100	49	36.57	85	63.43	134	100
							97	38.96	152	61.04	249	100
Policy for Promoting Diversity												
No	30	68.18	14	31.82	44	100	22	50.00	22	50.00	44	100
Yes	106	51.71	99	48.29	205	100	75	36.59	130	63.41	205	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100

	Non-test User		Test User			Non-test User		Test User	
	Mean	SD	Mean	SD		Mean	SD	Mean	SD
Number of Practices for Promoting Diversity									
	2.068	1.588	2.811	1.687		2.097	1.675	2.627	1.653

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
Personnel Function (Central or Local)												
No	16	61.54	10	38.46	26	100	13	48.15	14	51.85	27	100
Yes	120	53.81	103	46.19	223	100	84	37.84	138	62.16	222	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Personnel Function (Local)												
No	78	57.35	58	42.65	136	100	54	39.71	82	60.29	136	100
Yes	58	51.33	55	48.67	113	100	43	38.05	70	61.95	113	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	%	N	%	N	%	N	%	N	%	N	%
Personnel Function (Central)												
No	35	59.32	24	40.68	59	100	25	41.67	35	58.33	60	100
Yes	101	53.16	89	46.84	190	100	72	38.10	117	61.90	189	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
External Consultants Used For Recruitment												
No	81	56.64	62	43.36	143	100	56	39.16	87	60.84	143	100
Yes	55	51.89	51	48.11	106	100	41	38.68	65	61.32	106	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Line Managers Involved in Recruitment												
No	11	61.11	7	38.89	18	100	6	33.33	12	66.67	18	100
Yes	125	54.11	106	45.89	231	100	91	39.39	140	60.61	231	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Extent of Line Manager Involvement in Recruitment												
None	12	63.16	7	36.84	19	100	6	31.58	13	68.42	19	100
Some	21	50.00	21	50.00	42	100	18	42.86	24	57.14	42	100
Equal Partner	60	60.00	40	40.00	100	100	43	42.57	58	57.43	101	100
Leading Role	42	49.41	43	50.59	85	100	29	34.52	55	65.48	84	100
Total	135	54.88	111	45.12	246	100	96	39.02	150	60.98	246	100
Focus Exclusively on Current Vacancy												
No	73	50.00	73	50.00	146	100	55	37.67	91	62.33	146	100
Yes	59	62.11	36	37.89	95	100	38	40.00	57	60.00	95	100
Total	132	54.77	109	45.23	241	100	93	38.59	148	61.41	241	100
Also Think about Longer Term Role (as well as current vacancy)												
No	91	57.59	67	42.41	158	100	65	41.14	93	58.86	158	100
Yes	41	49.40	42	50.60	83	100	28	33.73	55	66.27	83	100
Total	132	54.77	109	45.23	241	100	93	38.59	148	61.41	241	100
Insist on Exact Skills												
No	109	54.23	92	45.77	201	100	74	36.82	127	63.18	201	100
Yes	27	56.25	21	43.75	48	100	23	47.92	25	52.08	48	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Informal Recruitment Methods												
No	24	38.71	38	61.29	62	100	22	34.92	41	65.08	63	100
Yes	112	59.89	75	40.11	187	100	75	40.32	111	59.68	186	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100
Recruitment Agencies												
No	43	51.19	41	48.81	84	100	28	33.33	56	66.67	84	100
Yes	93	56.36	72	43.64	165	100	69	41.82	96	58.18	165	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100

	Non Test Users		Test Users		All		Non Test Users		Test Users		All	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Evaluation of Recruitment and Selection												
No	40	67.80	19	32.20	59	100	25	41.67	35	58.33	60	100
Yes	96	50.53	94	49.47	190	100	72	38.10	117	61.90	189	100
Total	136	54.62	113	45.38	249	100	97	38.96	152	61.04	249	100

	Non-test User		**Test User**		**Non-test User**		**Test User**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Number of Recruitment Methods								
	6.809	2.120	6.655	2.125	6.588	2.240	6.803	2.078

Table 18: Logit Regression For Personality Test Use, CIPD Dataset
Final Specification

	Coef.	Std. Err.	z	P>|z|	
Constant	-2.151	0.570	-3.770	0.000	***
Organisation Size					
100 to 199 Employees	1.318	0.527	2.500	0.012	**
200 to 499 Employees	0.931	0.488	1.910	0.057	*
500+ Employees	1.312	0.465	2.820	0.005	***
Steps Taken to Promote Diverse Workforce	0.897	0.412	2.180	0.030	**
External Consultants Used for Recruitment	0.647	0.285	2.270	0.023	**
Filling Vacancies: Focus Only on Current Requirements	-0.645	0.288	-2.240	0.025	**
N	242				
pseudo-R2	0.086				
Log Likelihood	-150.207				

*   Significant at 10 %,   ** Significant at 5 %,   *** Significant at 1 %

Table 19: Logit Regression For General Ability Test Use, CIPD Dataset
Final Specification

	Coef.	Std. Err.	z	P>|z|	
Constant	-0.772	0.535	-1.440	0.149	
Local Personnel Function involved in Recruitment	0.700	0.291	2.410	0.016	**
Filling Vacancies: Consider More demanding jobs in future	0.503	0.304	1.660	0.097	*
Informal Recruitment Methods Used	-1.194	0.391	-3.050	0.002	***
Recruitment Agencies Used	-0.559	0.322	-1.730	0.083	*
Number of Recruitment Methods	0.209	0.079	2.630	0.008	***
Evaluation of Recruitment & Selection	0.539	0.327	1.650	0.099	*
N	239				
pseudo-R2	0.083				
Log Likelihood	-150.256				

*   Significant at 10 %,   ** Significant at 5 %,   *** Significant at 1 %

Table 20: Logit Regression For Literacy/Numeracy Test Use, CIPD Dataset
Final Specification

	Coef.	Std. Err.	z	P>|z|	
Constant	-0.109	0.394	-0.280	0.781	
No of Practices for Promoting Diverse Workforce	0.249	0.085	2.920	0.004	***
Filling Vacancies: Focus on Current Requirements Only	-0.570	0.282	-2.020	0.044	**
Informal Recruitment Methods Used	-0.608	0.323	-1.880	0.060	*
N	235				
pseudo-R2	0.0614				
Log Likelihood	-152.01404				

*   Significant at 10 %,   ** Significant at 5 %,   *** Significant at 1 %

Table 21: Logit Regression For Specific Skills Test Use, CIPD Dataset Final Specification

	Coef.	Std. Err.	z	P>|z|
Constant	0.449	0.233	1.930	0.054 *
Business Sector				
Services	-0.416	0.327	-1.270	0.204
Public Sector	0.685	0.326	2.100	0.035 **
Insist on Exact Skills when Recruiting	-0.596	0.336	-1.770	0.076 *
N	249			
pseudo-R2	0.041			
Log Likelihood	-159.699			

*   Significant at 10 %,   ** Significant at 5 %,   *** Significant at 1 %

Appendix: Definitions of Variables Used in the Analysis of WERS 98

DEPENDENT VARIABLES

PERTEST is a dummy variable taking the value 1 if an organisation uses personality tests for any vacancies

COMTEST is a dummy variable taking the value 1 if an organisation uses competency tests

INDEPENDENT VARIABLES

A. Establishment Size Variables

ESIZE0 = 10 to 24 employees
ESIZE1 = 25 to 49
ESIZE2 = 50 to 99
ESIZE3 = 100 to 199
ESIZE4 = 200 to 499
ESIZE5 = 500 plus

ESIZE0 is used as a base category in the regressions.

LGRORG is a dummy variable taking value 1 if the workplace is part of a larger organisation.

B. Economic Variables

Training variables

Dummy variables were set up for the proportion of employees in largest occupational group who had received off the job training in the last twelve months., as follows.

SMTRNHI = all (100%) or almost all (80-99%)
SMTRNMD = most (60-79%) or around half (40-59%)
SMTRNLO = some (20-39%) or just a few (1-19%)
The base category for the regressions is none (0%)

IPSTAT is a dummy variable taking the value 1 if a workplace has IIP status.

Long-term employment

LTERM is a dummy variable taking the value 1 if interviewee either strongly agrees or agrees with the statement 'employees are led to expect long-term employment in this organisation'.

STCON1 is a dummy taking the value 1 if workplace has people working on a temporary basis or on fixed term contracts of less than one year.

STCON2 is a dummy variable taking the value 1 if the workplace has people who have fixed term contracts for one year or more.

Ease of Firing Employees

JGUARNT is a dummy variable taking the value 1 if there are guaranteed job security or non-compulsory redundancies policies for at least one occupational group.

Proportions in Occupational Categories

NMNGPC is proportion of managers and administrators in the workplace

NPROPC professionals
NTECPC technical staff
NCLEPC clerical
NSALPC sales
NOPEPC clerical and secretarial
NROUPC routine unskilled

Vacancies

Respondents were asked, in which occupational groups have you had vacancies in the past 12 months. Dummy variables taking the value 1 if a vacancy in a particular occuapational group as follows:

CVAC1 for managers and senior administrative occupations
CVAC2 for professional occupations
CVAC3 for technical/scientific occupations
CVAC4 for clerical/secretarial occupations
CVAC5 for craft/skilled manual occupations
CVAC6 for personal service occupations
CVAC7 for sales occupations
CVAC8 for operative and assembly manual occupations
CVAC9 for routine unskilled manual occupations
CVAC10 for none of these

Local Unemployment Rates

Banded unemployment rates for travel to work area

UNEMP1 0-2 per cent
UNEMP2 2-3
UNEMP3 3-5
UNEMP4 5-7
UNEMP5 7-7.75
UNEMP6 7.75 +

UNEMP1 is the base.

Salaries

HISAL is the proportion of full-time employees earning more than £22k.

Performance-related pay

PRPAY is a dummy for individual or group performance-related schemes for any employees at the workplace.

C. Organisational Characteristics

Public sector

PUBSCT is a dummy taking the value 1 if the establishment is part of the public sector.

Trade union Recognition

UR takes the value 1 if a union is recognised at the workplace.

Equal opportunities

EQOPP is a dummy variable taking the value 1 if a workplace has a formal written equal opportunities policy.

ZPRAC is a score between zero and six. The workplace scores one point for each of the following: keeping employee records with ethnic origin identified; collecting statistics on posts held by men and women; monitoring promotions by gender, ethnicity etc; reviewing selection procedures to identify discrimination; reviewing the relative pay of different groups; making adjustments at the workplace to accommodate those with disabilities.

Age of establishment

Length of time at current address.

CESTAGE1: 0 to 4 years
CESTAGE2: 5 to 9 years
CESTAGE3: 10 to 24 years
CESTAGE4: 25 years plus

CESTAGE1 is the base category.

Presence of a personnel specialist

PERSPEC is a dummy variable which takes the value 1 if job title of interviewee is human resources manager, personnel manager, employee relations manager; if they spend 50 per cent or more of their time on personnel matters; or if there is someone at a higher level in the organisation who spends a major part of their time on personnel matters.

Grievance procedures

HCOMP1 is a dummy taking the value 1 if an employee has made a complaint to industrial tribunal in the last twelve months.

HPROC takes the value 1 if the workplace has a formal procedure for dealing with grievances.

Internal Labour Markets

INTLAB is a dummy variable. It takes the value 1 if internal applicants are either the only source of recruitment or they were given preference over external applicants in recruitment.

D. Other Explanatory Variables

Industrial Sector

dummy variables for industrial sector of the workplace.

ASIC1 = manufacturing
ASIC2 = electricity, gas and water
ASIC3 = construction
ASIC4 = wholesale and retail
ASIC5 = hotels and restaurants
ASIC6 = transport and communication
ASIC7 = financial services

ASIC8 = other business services
ASIC9 = public administration
ASIC10 = education
ASIC11 = health
ASIC12 = other community services

Manufacturing (ASIC1) is the base category for the regression analysis.

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