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High Performance Working in the Employer Skills Surveys

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High Performance Working in the Employer Skills Surveys

Professor Stephen Wood, Mr Mark Burridge, Drs William Green, Sandra Nolte, Daniela Rudloff

School of Management, University of Leicester

Aoife Ni Luanaigh

Senior Research Manager

UK Commission for Employment and Skills

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Foreword

The UK Commission for Employment and Skills is a social partnership, led by Commissioners from large and small employers, trade unions and the voluntary sector. Our ambition is to transform the UK's approach to investing in the skills of people as an intrinsic part of securing jobs and growth. Our strategic objectives are to:

- Maximise the impact of employment and skills policies and employer behaviour to support jobs and growth and secure an internationally competitive skills base;
- Work with businesses to develop the best market solutions which leverage greater investment in skills;
- Provide outstanding labour market intelligence which helps businesses and people make the best choices for them.

The third objective, relating to intelligence, reflects an increasing outward focus to the UK Commission's research activities, as it seeks to facilitate a better informed labour market, in which decisions about careers and skills are based on sound and accessible evidence. Relatedly, impartial research evidence is used to underpin compelling messages that promote a call to action to increase employers' investment in the skills of their people.

Intelligence is also integral to the two other strategic objectives. In seeking to lever greater investment in skills, the intelligence function serves to identify opportunities where our investments can bring the greatest leverage and economic return. The UK Commission's first strategic objective, to maximise the impact of policy and employer behaviour to achieve an internationally competitive skills base, is supported by the development of an evidence base on best practice: "what works?" in a policy context.

Our research programme provides a robust evidence base for our insights and actions, drawing on good practice and the most innovative thinking. The research programme is underpinned by a number of core principles including the importance of: ensuring 'relevance' to our most pressing strategic priorities; 'salience' and effectively translating and sharing the key insights we find; international benchmarking and drawing insights from good practice abroad; high quality analysis which is leading edge, robust and action orientated; being responsive to immediate needs as well as taking a longer term perspective. We also work closely with key partners to ensure a co-ordinated approach to research.

This project explores the variables relating to High Performance Working (HPW) which were included in the UK Commission's Employer Skills Survey 2011, as well as how they relate to training activity, skill deficiencies and product market strategies. It identifies the take up of HPW practices across the UK, how this changed between 2007 and 2011, and take-up patterns by establishment sector, size, occupation and geography. It then identifies the predictors of the likelihood of being a HPW organisation.

Sharing the findings of our research and engaging with our audience is important to further develop the evidence on which we base our work. Evidence Reports are our chief means of reporting our detailed analytical work. All of our outputs can be accessed on the UK Commission's website at www.ukces.org.uk.

But these outputs are only the beginning of the process and we are engaged in other mechanisms to share our findings, debate the issues they raise and extend their reach and impact.

We hope you find this report useful and informative. If you would like to provide any feedback or comments, or have any queries please e-mail info@ukces.org.uk, quoting the report title or series number.

Lesley Giles

Deputy Director

UK Commission for Employment and Skills

Table of Contents

Executive Summary	1
1 Introduction	1
2 High Performance Working and the UK Commission’s employer surveys	3
2.1 Models of High Performance Working.....	3
2.2 The impact of High Performance Working	4
2.3 The UK Commission’s surveys	5
3 The use of HPW practices in 2011	10
3.1 HPW uptake by ownership sector	11
3.2 HPW Uptake by broad industrial sector	13
3.3 HPW uptake by establishment size.....	16
3.4 HPW uptake by country	17
3.5 HPW uptake by English regional grouping	19
3.6 HPW Uptake by Largest Occupational Group in the workplace	21
3.7 HPW Uptake in establishments that are part of a larger organisation	23
3.8 HPW Uptake by Product Market Strategy	25
3.9 Summary.....	30
4 The relationships between HPW practices	31
4.1 Relationships between use of practices	31
4.2 Predictors of being a HPW organisation	33
4.3 Potential outcome concomitants for HPW	41
4.4 Summary.....	44
5 Change in uptake of HPWPs (2007 to 2011)	46
5.1 Use of HPW practices.....	46
5.2 Predictors of being a HPW organisation	48
5.3 Summary.....	51
6 Conclusions	53
Annex A	59
Bibliography	73

Tables and figures

Table 1: Groupings of HPW practices	2
Figure 2.1: The 4A model of HPW capability	3
Table 2.1 HPW indicators in the UK Commission’s skills surveys	6
Figure 2.1: HPW practices and concomitants in the 2011 survey	8
Table 2.2: HPW practices and corresponding questions in the 2011 survey	8
Figure 3.1: Use of HPW Practices across the UK in 2011	10
Figure 3.2: Use of practices by broad ownership sector	12
Figure 3.3: Use of practices by broad industrial grouping	14
Table 3.1 Proportion of establishments adopting 9+ of 14 HPW practices by sector.. 15	
Figure 3.4: Use of HPW practices by establishment size	16
Figure 3.5: Uptake of HPW practices by UK nation	18
Figure 3.6: Use of HPW practices by English regional grouping	20
Table 3.2: Use of HPW practices by largest occupational group in the workplace (% of establishments)	22
Figure 3.7: Use of HPW practices by membership of larger organisation	24
Table 3.3: Questions for strategy variables in the 2011 survey	25
Figure 3.8: HPW practices by establishment’s level of goods or services customisation	26
Table 3.4 HPW Practices by level of non-price dependence (% of establishments)	27
Figure 3.9 HPW practices by extent to which the establishment leads on new product/process development	28
Figure 3.10 HPW Practices by whether the establishment competes for a premium quality of product or service	29
Table 4.1: Factor analysis of Involvement and Skills acquisition practices	32
Figure 4.1: Predictors of elements of HPW	34
Table 4.2: Predictors of HPW subsystems (whole economy)	35
Table 4.3: Predictors of HPW Subsystems with inclusion of strategy variables (Private Sector)	38
Table 4.4: Predictors of HPW Subsystems including Investors in people and business plan as explanatory variables (whole economy)	39
Table 4.5: Predictors for HPW establishment (UK Commission time-series definition)	41
Table 4.6: Regression results for recruitment and retention	42
Table 4.7: Regression results for extent of training	43
Table 4.8: Regression results for skills deficiencies	44
Figure 5.1: HPW use in 2007 and 2011, and change	46
Figure 5.2: HPW practices change 2011-2007 by establishment size band	47
Figure 5.3: Likelihood of being a HPW establishment by sector	48
Table 5.1: Predictors of being a HPW organisation (2007 and 2011)	49

Table 5.2: Distribution of the number of practices across establishments.....	50
Table 5.3: Cumulative uptake of practices across establishments (% of establishments adopting at least X practices)	51
Table A.1: Predictors of Total Use of Practices in 2007 and 2011 and comparison with 2011 Results for HPW scales.....	59
Table A.2: Predictors of Investors in People, ISO9000 and Business Plan in 2007 and 2011	60
Table A.3: Correlation matrix for the Employee Involvement practices	61
Table A.4: Correlation matrix for the Skills and Involvement practices	61
Table A.5: Correlation matrix for the Motivational practices.....	62
Table A.6: Correlation matrix for the UKC14 practices.....	63
Table A.7: Factor analysis of the UKC14 practices	64
Table A.8: Predictors of HPW Subsystems (whole economy).....	65
Table A.9: Predictors of HPW subsystems (by Private and Public sector)	66
Table A.10: Predictors of Motivational Supports (whole economy).....	67
Table A.11: Motivational supports (Private Sector).....	68
Table A.12: Motivational supports (Public Sector).....	69
Table A.13: Motivational Supports with inclusion of strategy variables (Private Sector)	70
Table A.14: Predictors of HPW Subsystems including Investors in people and business plan as explanatory variables (whole economy).....	71
Table A.15: Motivational Support including Investors in people and business plan as explanatory variables (whole economy)	72

Executive Summary

'High Performance Working is a general approach to managing organisations that aims to stimulate more effective employee involvement and commitment to achieve high levels of performance' (Belt and Giles 2009: ii). It is important because raising the supply of skills does not automatically result in the raising of workplace productivity. These skills need to be used and applied effectively in the workplace. High Performance Working (HPW) practices apply across a range of areas, including approaches to work organisation, employment relations, management and leadership, and organisational development.

Defining and measuring HPW

This study explores the adoption of HPW as measured in the UK Commission's Employer Skills Survey 2011. Defining and measuring HPW is complex because: a holistic approach covers a wide range of business practices; some of those practices will not be applicable to all businesses (so not to adopt *individual* practices will not necessarily mean the business is not *generally* adopting HPW practices); and no existing survey tool completely covers all aspects of HPW. To do so would require a bespoke tool and, to date, this has not been created (see Bates, Cox and Robertson-Giles, 2009). Nevertheless, the UK Commission's skills surveys include questions relating to the use of some High Performance Working Practices. *Skills for the Workplace: Employer Perspectives* (2008), which reported the findings from the 2007 Employer Perspectives Survey of 13,500 employers, included 16 indicators of HPW. Establishments adopting ten or more of the practices were identified as HPW organisations. The UK Commission's Employer Skills Survey 2011 included 14 of these same practices, as well as a wider range of related variables. To obtain as consistent a measure as possible, the UK Commission definition of HPW establishments is those adopting nine or more of these 14 practices in 2011.

However, it is also useful to explore the take-up of the individual indicators and of a wider set of metrics available in the 2011 survey. In exploring these wider metrics, three groups of practices are identified around employee involvement, skills acquisition and motivational practices (see Table 1).

Table 1: Groupings of HPW practices

Employee Involvement	Skills Acquisition	Motivational Practices
<ul style="list-style-type: none"> • Task discretion • Task variety • Problem solving teams • Descriptions • Project teams • Team briefings • Suggestion scheme • Staff survey 	<ul style="list-style-type: none"> • Induction • Work shadowing • Off-the-job training • On-the-job training • Training plan • Training budget • Annual performance review • Evaluation of training 	<ul style="list-style-type: none"> • Organisational Performance-related pay • Individual performance-related pay • Formal employee consultation procedures • Formal discipline and dismissal procedures • Flexible benefits • Flexible working • Equal opportunity policy

Thus the report considers the take-up of individual HPW practices; the ‘UK Commission’s measure’ (which is consistent between the 2007 and 2011 surveys); and take up around the three groups of practices.

This report provides an analysis of the survey data and assesses:

- The level of uptake of HPW practices individually and on a group basis across the UK.
- The pattern of HPW practices uptake by sector, size, occupation and geography.
- The relationships amongst HPW practices and between them and other variables in the 2011 Employer Skills Survey.
- The best predictors of the likelihood of an establishment being a HPW organisation.
- The change in the uptake of HPW practices from 2007 to 2011.

The UK Commission’s Employer Skills Survey is a survey of 87,000 business establishments of all sizes across the UK.

The level of uptake of HPW practices across the UK

The use of HPW practices in 2011 in the UK varies by practice. The most commonly reported practices are task discretion (87 per cent) and task variety (87 per cent), with team briefings (79 per cent) and access to flexible working (78 per cent) close behind. The least commonly used practice is creating project teams (9 per cent), although 57 per cent of establishments use problem-solving teams. Three fifths (62 per cent) of establishments have a business plan, 16 per cent Investors in People accreditation and 12 per cent ISO9000 accreditation.

The pattern of HPW practices uptake by sector, size, occupation and geography

The percentage of establishments using employee involvement, skills acquisition, and motivational practices strongly reflects the size of the establishment, with practices more likely to be adopted in larger establishments. The sectors with the highest proportions of establishments adopting at least nine of the 14 practices included in the UK Commission definition of HPW are mining and quarrying, financial services, public administration and education. Public administration, education, and health and social work establishments report the highest use of individual HPW practices.

Establishments in which the largest occupational group comprises professionals, associate professionals, or caring, leisure and other service occupations make the greatest use of the employee involvement practices. Three of the eight employee involvement practices (task discretion, task variety and problem solving teams) are more likely to be adopted by establishments with higher levels of customisation. Establishments adopt a similar percentage of skill acquisition and motivational practices irrespective of their level of customisation. Establishments competing in markets with high or premium quality products or services are more likely to adopt HPW practices than establishments that produce standard or basic quality products or services.

There is variation in the uptake of HPW practices by country. Overall, establishments in Scotland use training-related practices most consistently. Use of motivational HPW practices varies across countries. Uptake rates for task discretion and task variety are quite similar between broad English regions. Higher uptakes are reported for the North of England for six of the eight skills acquisition practices. The use of motivational supports is more diverse across regions.

The relationships amongst HPW practices and between them and other variables in the 2011 Employer Skills Survey

There are significant relationships between the use of most HPW practices but they are relatively weak. The use of factor analysis confirms that a single common factor does not underlie all the practices. The analysis shows that there are three groupings of practices:

- role involvement, including task discretion and variety
- organisational involvement
- skills and knowledge acquisition practices.

Establishments that lead the way in terms of developing new products, services or techniques, are more likely to adopt HPW practices. Establishments stating that they compete in markets with high or premium quality products or services are more likely to adopt all HPW practices than establishments that produce standard or basic quality products or services.

The relationship between HPW and recruitment and retention problems (the number of hard-to-fill vacancies as a percentage of total employment and whether the establishment has difficulty retaining staff) is mixed. The skills acquisition practices are significantly positively related to both variables, perhaps because establishments experiencing recruitment and retention difficulties adopt skills acquisition practices to overcome the difficulties. Motivational practices are not strongly associated with recruitment and retention difficulties, but there is a positive relationship between individual performance-related pay and difficulty retaining staff.

Training is measured by the average of the numbers of days training employees receive at an establishment and the percentage of establishment staff trained. Skill acquisition practices are positively related to both variables.

Skills deficiencies are measured by whether the establishment has skills gaps and skills shortage vacancies. Role involvement practices are positively related to skills gaps, and skill acquisition practices are positively related to both skills gaps and skills shortage vacancies. These findings may reflect the fact that organisations with skill-related challenges have adopted HPW practices, but the direction of causality is unclear.

The best predictors of the likelihood of an establishment being a HPW organisation

There are significant relationships between the use of some of the practices in the UK Commission's time-series definition of HPW organisations. Providing training, having a training plan, a training budget, evaluating training, having a business plan, employee consultation and performing annual reviews are practices that are highly correlated with each other. This suggests that they are usually interconnected and implemented together.

For the UK Commission's time-series definition of being a HPW establishment, predictors include size (with smaller workplaces less likely to be HPW establishments) and being part of a larger organisation (more likely). All else being equal, establishments in the manufacturing and construction groups are significantly less likely to be HPW establishments, and those in the public sector are significantly more likely than those in private services (the latter reflects the pattern of uptake). However, region is not a predictor. Customised production is positively related to the probability of being a HPW establishment when considering the whole economy and the public sector.

The change of uptake of HPW practices from 2007 to 2011

There has been a decline in the use of almost all the practices between 2007 and 2011 in the UK. Work shadowing, annual performance review, evaluation of training and individual performance-related pay experienced the greatest decreases.

The change in use of HPW practices varies by establishment size. In large establishments (250 or more employees), the proportion using project teams, training, annual performance review, employee consultation, flexible benefits, ISO9000 and with a business plan increased. The greatest decline in the proportion of establishments using individual HPW practices was for the smallest establishments.

Analysis was also undertaken on the predictors of being a HPW organisation (having at least nine of the 14 practices) in 2007 and 2011. Predictors in both years included sector and size of establishment, as well as being part of a larger organisation. There are two differences between the two years. Establishments in the primary sector were less likely than those in other sectors to be HPW organisations in 2007, but not in 2011. However, establishments in the construction sector were less likely than those in other sectors to be HPW organisations in 2011, but not in 2007.

1 Introduction

The UK Commission's Employer Skills Survey 2011 includes a number of indicators which cover various aspects of High Performance Working (HPW). High performance working is defined as 'a general approach to managing organisations that aims to stimulate more effective employee involvement and commitment to achieve high levels of performance' (Belt and Giles 2009: ii). HPW is important because raising the supply of skills does not automatically result in the raising of workplace productivity and employee engagement. These skills need to be used and applied effectively in the workplace. High performance working practices cover a range of areas, including approaches to work organisation, employment relations, management and leadership, and organisational development.

High performance work practices include skill and knowledge acquisition, employee involvement and motivational practices. They include enriched job design, team work, functional flexibility, idea capturing, training and development, information sharing and appraisal, performance-related pay and equal opportunities policies. Research evidence suggests that adoption of HPW practices is linked to improved organisational performance, and that such practices are most effective in influencing behaviour when used together and viewed as a synergistic set (sometimes referred to as 'high performance work systems').

The UK Commission's Employer Perspectives Survey 2007 and Employer Skills Survey 2011 include a range of practices associated with HPW systems. The objectives of this project are to provide comprehensive and robust analysis of the survey's data to assess:

- the level of uptake of HPW practices across the UK;
- the pattern of HPW practices uptake by sector, size, occupation and geography;
- the relationships amongst HPW practices and between them and other variables asked about in the survey;
- the best predictors of the likelihood of a business being a HPW organisation;
- the change of uptake of HPW practices from 2007 to 2011.

This report presents the results of the analysis of the high performance work practices contained in the UK Commission's Employer Skills Survey of 2011 and compares it where possible with data on a smaller range of practices in the 2007 Employer Perspectives Survey.

Section 2 of this report defines high performance working and the conceptual context of the study, including a classification of the variables into categories. Section 3 outlines the level of uptake of HPW practices across the UK, as well as the pattern of HPW practices uptake by sector, size, occupation and geography. Section 4 covers the relationships between the HPW practices as they are used by organisations and identifies predictors of the likelihood of a business being a HPW organisation. Section 5 outlines how the use of individual and groupings of practices has changed from 2007 to 2011. Section 6 discusses the overall findings and implications for future surveys and policy.

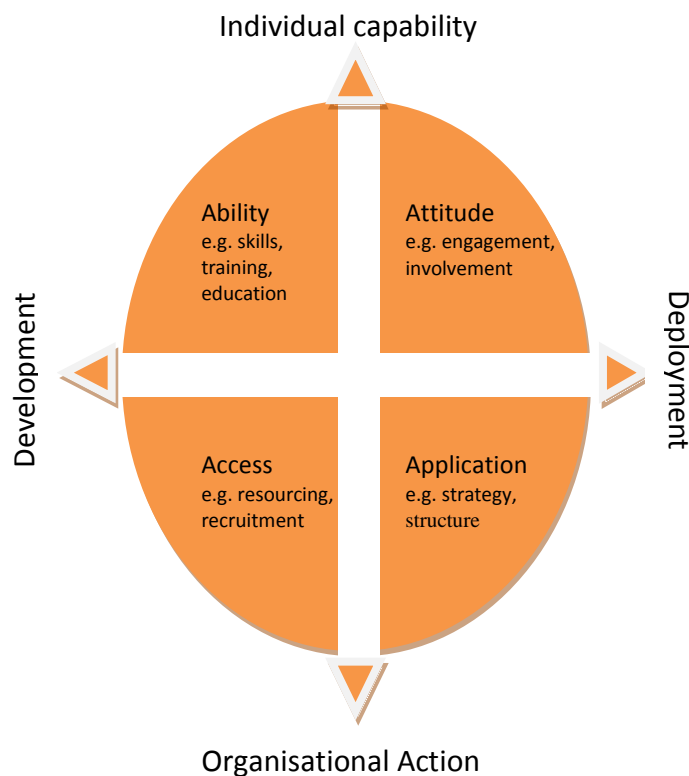
2 High Performance Working and the UK Commission's employer surveys

High Performance Working encompasses the bringing together and implementation of a number of practices in a holistic way to effectively manage an organisation. It is based on theory that individual and organisational performance is affected by the way work is designed and organised, opportunities for employees' involvement in business decisions, abilities and knowledge of staff, and their motivation to participate and do productive work. There are a number of models of HPW, as outline in the rest of this chapter.

2.1 Models of High Performance Working

There are a number of different ways of conceptualising and referring to HPW. The UK Commission's definition of HPW is built around the 4A model of capability (Tamkin et al, 2005). The model is based around two key dimensions: the development and deployment of capability, and the role of individuals and the organisation. This creates four quadrants of activity: ability, access, attitude and application.

Figure 2.1: The 4A model of HPW capability



Source: Tamkin et al., SSDA, 2004.

There are other conceptual models of HPW. For example, the AMO model is built around three themes: ability; motivation; and opportunity to participate. What the models share is a focus on involving both employers and employees in providing a supportive environment and displaying discretionary efforts (Belt and Giles, 2009).

2.2 The impact of High Performance Working

In general, returns from increasing the use of HPW practices are seen as exponential, as there are synergistic effects between the practices. However, organisations may emphasise different practices, and adopt very different approaches to HPW. For example, the emphasis within one organisation may be on intensive training and development (focusing on skills acquisition), and in another on performance management that centres on goal-setting. Much research on the effects of HPW practices is based on aggregating the use of practices to form global indexes. However, this may mask differences between organisations with quite different approaches to management. For example, one organisation could implement merit pay, promotion on merit and profit-sharing and no involvement practices, and another implement quality circles, team work and formal job descriptions.

There is considerable research showing that adopting HPW practices is related to organisational performance. However, the results vary significantly across performance measures and give little guidance to which if any practices or approaches are likely to be associated with higher performance. The use of certain practices may be strongly correlated; for example organisations with training budgets are more likely to have training plans for employees. However, it may be that different configurations of use are in fact equally effective, or alternatively those organisations that use particular combinations are correctly fitting their HRM to their circumstances.

There are no strong theories explaining why managements will introduce HPW practices or systems, or why they are more common in certain types of workplace. Factors typically included in discussion are sector, organisational size, strategic context and direction, and operational management methods. For example, it may be argued that workplaces in the service sector use HPW practices more than those in other sectors, on the grounds of closer relationships between the organisation and its customers or clients; that organisational size is important because there are economies of scale in practice use; that organisations for whom producing high quality products and being innovative in products or processes are of paramount importance are more likely to adopt HPW practices; and that the use of HPW practices is fundamental to modern operational methods such as Lean Production.

It has also been argued that non-profit and public sector organisations are more likely to use role and organisational involvement management than private ones, while private sector organisations may use motivational supports more than non-profit and public sector organisations (Kalleberg et al, 2006). Some research suggests that workplaces that have high levels of representative voice are more likely to have HPW practices as they are one means of involving and developing the knowledge of workers. This project explores the best predictors of organisations adopting HPW practices.

2.3 The UK Commission's surveys

The UK Commission's 2011 Employer Skills Survey was a telephone survey consisting of over 87,500 interviews. The sample frame was selected through a stratified random sampling approach to include establishments of all four UK nations, every region of the four nations, SIC-defined sector and size band. The overall response rate was 39 per cent. The survey included questions on the use of a number of HPW practices and related indicators. The UK Commission's 2007 Employer Perspectives Survey was a telephone survey of over 13,500 establishments, with quotas set by sector (Sector Skills Council footprint), size and nation. The overall response rate was 37 per cent.

The UK Commission included 16 indicators of HPW in its skills for business surveys, the most recent of which was carried out in 2007 and published as *Skills for the Workplace: Employer Perspectives* (Shury, Davies and Riley, 2008). A composite measure combining these 16 indicators was created and a score of 10 out of 16 (where each indicator accounted for 1) was considered to indicate that an establishment was a HPW establishment. In the 2011 UK Commission's Employer Skills Survey, 14 of these same practices were included in the survey, as well as additional measures that map onto the 4As model of HPW outlined in Section 2. A score of 9 out of 14 indicates that an establishment was a HPW establishment.

Table 2.1 below maps 30 indicators included in the 2007 and 2011 surveys that can be considered to be HPW measures. The cells shaded in grey correspond to the 14 indicators that appeared in the 2007 composite HPW measure and are repeated again in 2011. Some of the HPW indicators are composite measures – for example, 'training provided' covers respondents who provide either on-the-job or off-the-job training, or both.

Table 2.1 HPW indicators in the UK Commission's skills surveys

Indicator	2007	2011
Awards performance related bonuses	X	X
Individual performance related pay	X	X
Flexible benefits	X	X
Training provided	X	X
Training plan	X	X
Training budget	X	X
Annual performance review	X	X
Work shadowing	X	X
Formally assess performance after training	X	X
Investors in People accredited	X	X
Holds ISO9000	X	X *
Creates teams to work on projects	X	X *
Business plan	X	X
Employee consultation	X	X *
Training needs assessment	X	
Consult with trade unions	X	
Steps taken to overcome recruitment difficulties		X
Identification of high potential individuals		X*
Staff have formal written job description		X
Give employees information about the financial position of the establishment	X	X*
Have teams of people that solve specific problems		X*
Have an equal opportunities policy		X*
Formal procedure for dealing with discipline and dismissals		X*
Methods to communicate or share information		X*
Employees have task discretion and variety in their work		X*
Access to flexible working		X
Steps taken to overcome a lack of proficiency amongst staff		X
Types of on- and off- the job training provided		X

The analysis in this report is based on the UK-wide data files for the UK Commission's Employer Skills Survey 2011 and Employer Perspectives Survey 2007. In 2011, in order to maintain a reasonable interview length, establishments in the sample outside of Scotland were randomly allocated to two modules, and only those in the first module (and all establishments in Scotland) were asked questions relating to HPW. These are marked with an asterisk in Table 2.1. In addition, the 2011 data file includes responses from establishments with one or more people working at them, whereas the 2007 EPS sample is of establishments with two or more people working at them. In order to ensure comparability with the population covered by the 2007 survey, the descriptive analysis excludes establishments with just one person working at them. The unweighted base size for the HPW questions in the 2011 sample was 44,691; slightly over half the total sample.

The HPW and related indicators in the 2011 survey can be grouped into sets of practices. The analysis undertaken for this project, including assessing the correlations between practice use, is based on three main groups of practices: work organisation (opportunities for employee involvement and participation); skills acquisition (training and development); and motivation enhancement (incentives to perform in line with the organisation's objectives) (Appelbaum et al. 2000; Kalleberg et al. 2006; de Menezes and Wood 2006).

These groupings align well with the 4As model identified above. Only one practice (Equal opportunities policy) relates to the Access category. The remaining three areas (application, attitude and ability) correspond reasonably closely to employee involvement, motivational practices and skills acquisition respectively.

In addition, three of the practices can be viewed as concomitants of HPW. Investors in People and ISO 9000 accreditation are useful indicators of high performance working as many of the criteria imply the use of HPW practices, but have been classified as concomitants in the analysis of predictors of the adoption of HPW. Having a business plan is also not necessarily associated with the HPW, as the content may not always include HR issues, so has also been classed as a concomitant.

Figure 2.1 sets out the classification of practices and concomitants used in the main analysis. Table 2.2 lists the questions used to measure each of these practices and concomitants in the Employer Skills Survey 2011.

Figure 2.1: HPW practices and concomitants in the 2011 survey

<p>Employee Involvement</p> <ul style="list-style-type: none"> • Task discretion • Task variety • Problem solving teams • Descriptions • Project teams • Team briefings • Suggestion scheme • Staff survey 	<p>Skills Acquisition</p> <ul style="list-style-type: none"> • Induction • Work shadowing • Off-the-job training • On-the-job training • Training plan • Training budget • Annual performance review • Evaluation of training 	<p>Motivational Practices</p> <ul style="list-style-type: none"> • Organisational Performance-related pay • Individual performance-related pay • Formal employee consultation procedures • Formal discipline and dismissal procedures • Flexible benefits • Flexible working • Equal opportunity policy
<p>Concomitants</p> <ul style="list-style-type: none"> • Investors in People accreditation • ISO9000 accreditation • Business plan 		

Table 2.2: HPW practices and corresponding questions in the 2011 survey

Practice	Question
Employee Involvement	
Task discretion	To what extent would you say that employees at your establishment have discretion over how they do their work?
Task variety	To what extent would you say that employees at your establishment have variety in their work?
Problem solving teams	Does your establishment have teams of people that solve specific problems or discuss aspects of work performance? These are sometimes known as 'problem-solving groups' or 'continuous improvement groups'.
Descriptions	Approximately what proportion of your staff has a formal written job description?
Project teams	Does your establishment create teams of people, who don't usually work together, to work on a specific project?
Team briefings	Which of the following methods do you use to communicate or share information in this workplace: [Scheduled team meetings]?
Suggestion scheme	Which of the following methods do you use to communicate or share information in this workplace: [Formal staff suggestion scheme]?
Staff survey	Which of the following methods do you use to communicate or share information in this workplace: [Annual staff surveys]?
Skills Acquisition	
Induction	Which of the following types of training have you funded or arranged for employees at this establishment over the past year: [induction training]?
Work shadowing	And has your establishment done any of the following to aid the development of your employees in the last 12 months: [provided opportunities for staff to spend time learning through watching others perform their job roles]?

Off-the-job training	Over the past 12 months, have you arranged or funded any off-the-job training or development for employees at this site – by off-the-job training we mean training away from the individual’s immediate work position, whether on your premises or elsewhere.
On-the-job training	Over the past 12 months, have you arranged or funded any on-the-job training or development for employees at this site – by this I mean activities that would be recognised as training by the staff, and not the sort of learning by experience which could take place all the time.
Training plan	Does your establishment have any of the following: [a training plan that specifies in advance the level and type of training your employees will need in the coming year]?
Training budget	Does your establishment have any of the following: [a budget for training expenditure]?
Annual performance review (staff appraisal in 2007)	And approximately what proportion of your staff has an annual performance review?
Evaluation of training	Does your establishment formally assess whether the training and development received by an employee has an impact on their performance?
Motivational	
Organisational Performance-related pay	Bonuses that are based on the overall performance of the company?
Individual performance-related pay	And does your establishment have any of the following pay and incentive schemes for your employees: [individual performance-related pay]?
Formal employee consultation procedures (incl. trade unions)	Does your establishment have formal procedures in place for employee consultation (such as staff association, employee forum or trade union consultation)?
Formal discipline and dismissal procedures	Is there a formal procedure for dealing with discipline and dismissals (other than redundancies) for non-managerial employees?
Flexible benefits	And does your establishment have any of the following pay and incentive schemes for your employees: [flexible benefits]? <i>(Where additional clarification was required, the interviewer would supply the following: ‘This is the option to use some pre-tax pay for extra benefits such as pensions, childcare vouchers, life assurance [sic] etc.’)</i>
Flexible working	To what extent would you say that employees at your establishment have access to flexible working?
Equal opportunity policy	Does your establishment have an equal opportunities policy?
Concomitants	
Investors in People accreditation	Is your establishment currently accredited with the Investors in People Standard?
ISO9000 accreditation	Does your establishment currently hold any of the ISO 9000 standards?
Business plan	Does your establishment have a business plan that specifies the objectives for the coming year?

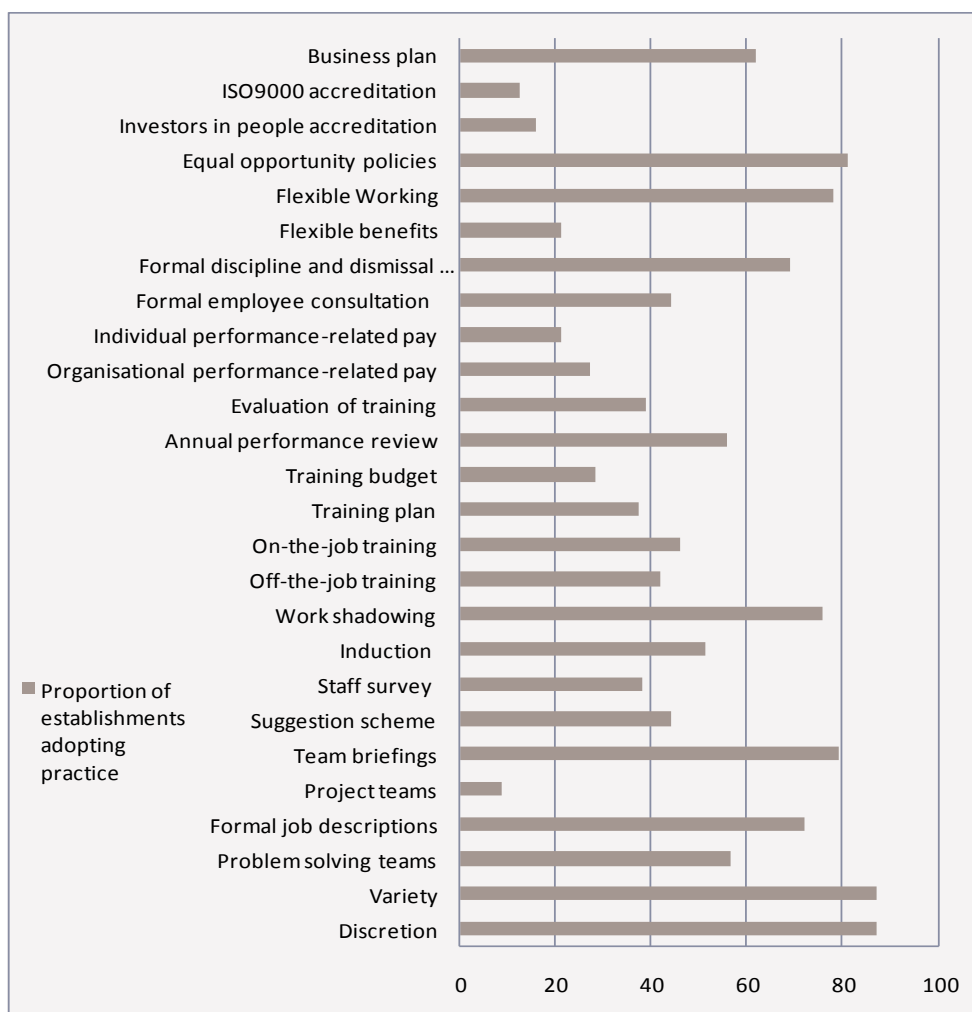
Chapter 3 provides a detailed analysis of the use of HPW practices across the UK in 2011.

3 The use of HPW practices in 2011

This chapter describes the level of uptake of HPW practices across the UK, and the pattern of uptake by sector, size, occupation and geography. This includes the 14 practices encompassed in the UK Commission’s definition as well as related practices.

The use of HPW practices in 2011 in the UK varies by practice. The most commonly used practices are discretion (87 per cent) and variety (87 per cent), with team briefings (79 per cent) and access to flexible working (78 per cent) close behind. The least commonly used practice is creating project teams (9 per cent), although 57 per cent of establishments use problem-solving teams. The spread in the use of motivational supports is particularly large, and ranges from 78 per cent for flexible working to 21 per cent for individual performance-related pay. Three fifths (61.8 per cent) of establishments have a business plan, 15.8 per cent Investors in People accreditation and 12.4 per cent ISO9000 accreditation (Figure 3.1).

Figure 3.1: Use of HPW Practices across the UK in 2011



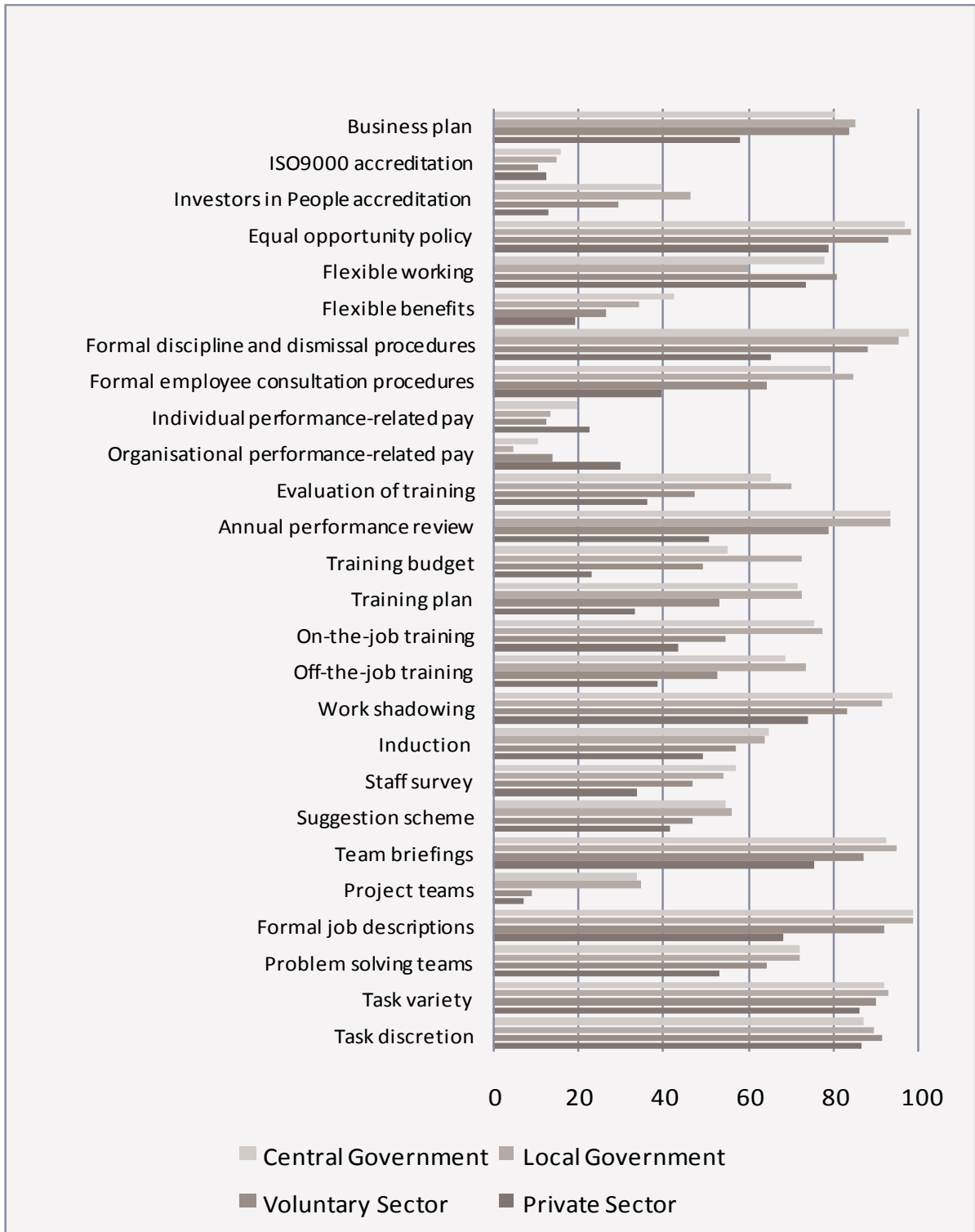
Source: UKCESS 2011

3.1 HPW uptake by ownership sector

There are substantial differences in practice use between establishments in the private, voluntary, and public sectors (Figure 3.2). Both central and local government establishments make more use of almost all HPW practices compared to those in the private or voluntary sectors. The most significant differences are: the use of training budgets (23 per cent of private sector establishments had a training budget in 2011 compared to 55 per cent of central government and 73 per cent of local government workplaces); the use of training plans (33 per cent in the private sector compared to roughly 72 per cent in the public sector); and the use of an annual performance review system (51 per cent in the private and 93 per cent in the public sector).

Overall, 13 per cent of private sector establishments have Investors in People accreditation (as do 30 per cent of voluntary sector establishments). In the public sector, 40 per cent of central government and 46 per cent of local government establishments have Investors in People accreditation. In the case of ISO9000 11 per cent of voluntary sector establishments have accreditation, 13 per cent of private sector, 15 per cent of local government, and 16 per cent of central government establishments. Private sector establishments are less likely to have a business plan than those in other sectors (58 per cent of private sectors establishments have a business plan compared to 80 per cent or more in the other three sectors).

Figure 3.2: Use of practices by broad ownership sector



Source: UKCESS 2011

Base: N = 44691

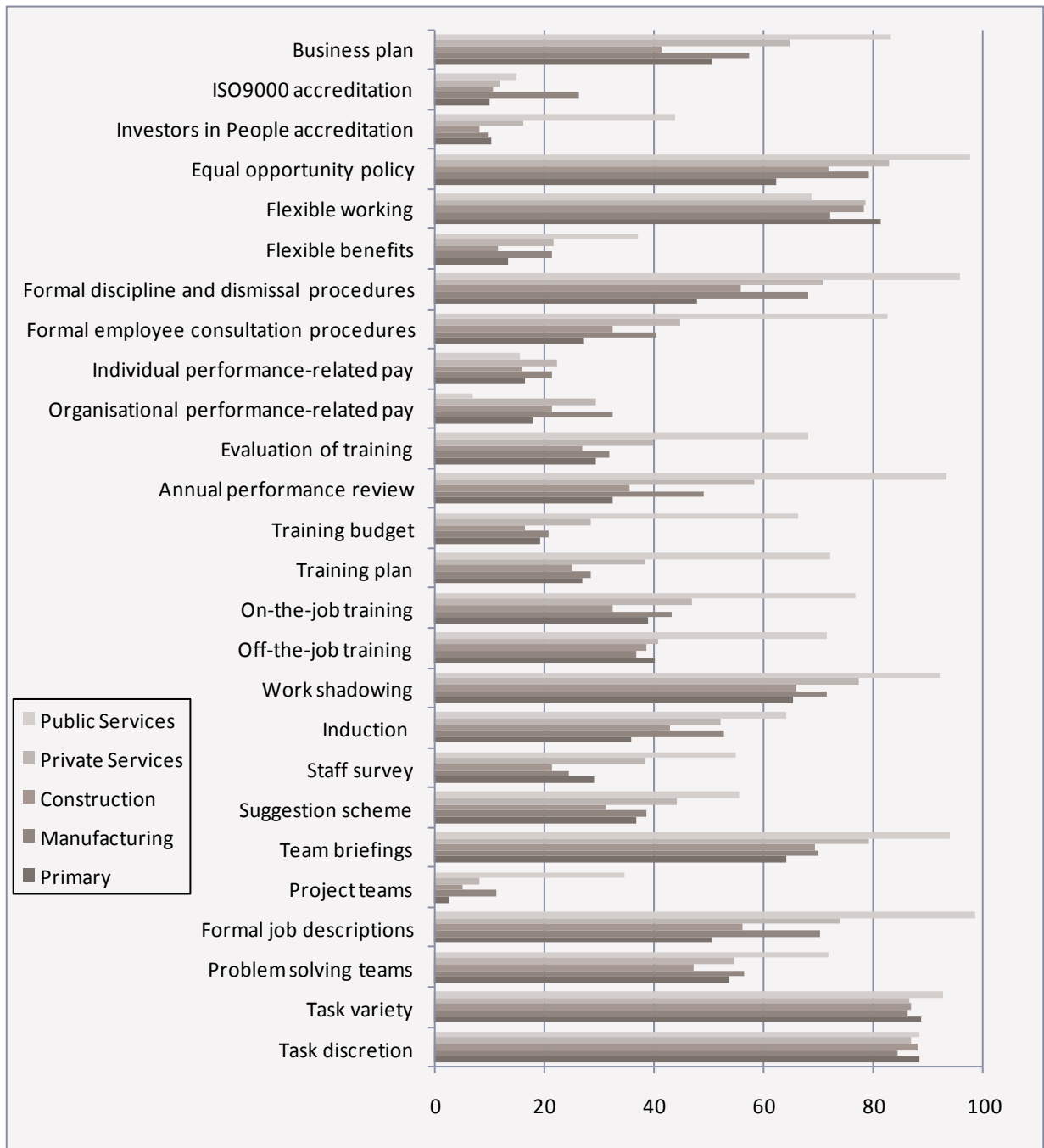
3.2 HPW Uptake by broad industrial sector

Differences in the level of adoption of HPW practices are also evident by broad industrial groupings (primary, manufacturing, construction, private services and public services) (Figure 3.3). Specifically, 31 per cent of service sector establishments have a training budget compared to 21 per cent of manufacturing workplaces and even lower figures for the primary and construction sectors. Similarly, 40 per cent of establishments in the service sector have a training plan compared to only around 25 per cent in the other three sectors.

Establishments in the manufacturing sector are most likely to make use of project teams and have organisational performance-related pay. In contrast, establishments in the service sector are more likely to make use of a number of employee involvement and skills acquisition practices. Around 35 per cent of workplaces in the primary and construction sectors use annual performance reviews, compared to approximately 60 per cent in services and 50 per cent in manufacturing. Sixty-five per cent of service sector establishments and 57 per cent of manufacturing workplaces have a business plan with the figure being somewhat lower for the primary industries (51 per cent) and construction industry (42 per cent). Two in ten (18 per cent) service sector establishments have Investors in People accreditation compared with fewer than 10 per cent in the other three industrial sector groupings (primary, manufacturing and construction), and 26 per cent of manufacturing establishments have ISO9000 accreditation compared to 12 per cent or less for the other groupings.

If we differentiate between private and public services (a combination of central and local government establishments), public service workplaces make substantially more use of all HPW practices identified in the survey except organisational performance-related pay, individual performance-related pay and flexible working. The biggest differences involved annual performance review (93.5 per cent in public services compared to 58.4 per cent in private services and even less in the other sectors) and employee consultation (87.2 per cent in public services compared to 45 per cent in private services and even lower in other sectors). Forty-four per cent of public service establishments have Investors in People compared to 16 per cent of those in private services; 15 per cent of public services establishments have ISO9000 compared with 12 per cent in private services; and 83 per cent of public service establishments have a business plan, compared to 65 per cent of private service ones.

Figure 3.3: Use of practices by broad industrial grouping



Source: UKCESS 2011

The sectors with the highest proportions of establishments adopting at least nine of the 14 practices included in the UK Commission definition of HPW are mining and quarrying, financial services, public administration, and education (Table 3.1).

Table 3.1 Proportion of establishments adopting 9+ of 14 HPW practices by sector

Sector	%
Agriculture, hunting, forestry and fishing	6.8
Mining and quarrying	44.9
Manufacturing	16.3
Electricity, gas and water supply	26.4
Construction	7.4
Wholesale and retail trade	22.4
Hotels and restaurants	18.3
Transport, storage and communications	12.4
Financial services	43.6
Real estate, renting and business activities	17.6
Public admin. and defence, compulsory social security	54.3
Education	46.5
Health and social work	33.3
Community, social and personal service activities	17.9

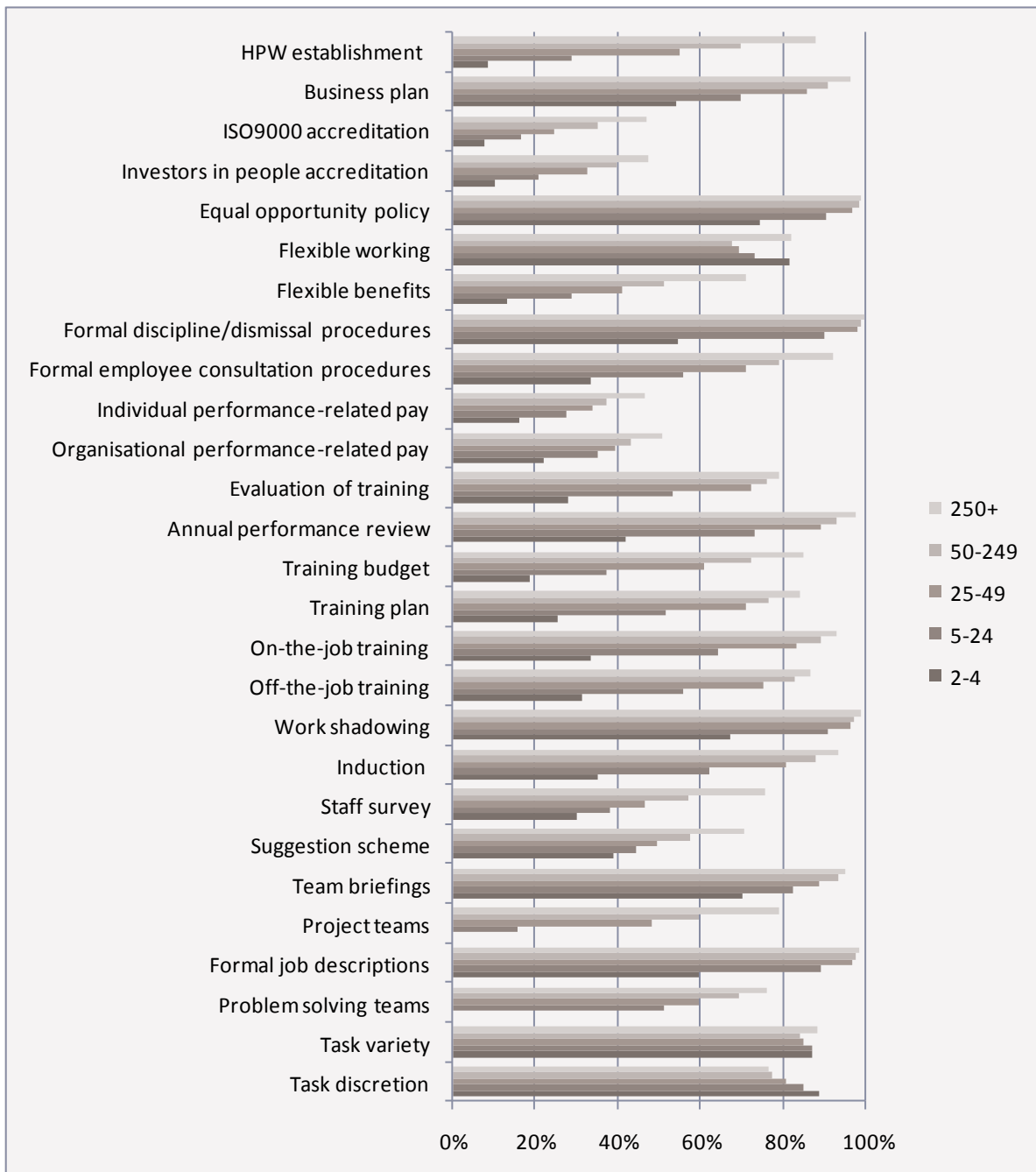
Source: UKCESS 2011. Base sizes vary.

Analysis by industrial sector (2-digit SIC) reveals that public administration, education, and health and social work establishments report by far the highest use of individual HPW practices. In each of these industrial groups over 90 per cent of establishments make use of work shadowing and 85 per cent indicate that their employees engage in either on- or off-the-job training and are subject to annual performance reviews. Public administration and educational establishments also make substantially more use of both problem solving teams, with 73 per cent in each reporting their use compared to 60 per cent or less in all other industries, and project teams, with 35 per cent in public administration and 40 per cent in educational establishments compared to 18 per cent or less elsewhere. Financial services make significantly more use of organisational performance-related pay and individual performance-related pay than any other industry with 58 per cent of workplaces using the organisational performance-related pay compared to a figure of only 37 per cent for the next highest user, the wholesale and retail trades, and 51 per cent using individual performance-related pay compared to only 25 per cent for the next biggest user, electricity, gas and water supply. In addition, establishments in agriculture and construction make very little use of flexible benefits with only 11 per cent compared to 20 per cent or more in most of the other industries.

3.3 HPW uptake by establishment size

The percentage of establishments using all types of HPW practices strongly reflects the size of the establishment (Figure 3.4). With three exceptions (task discretion, task variety and flexible working), practices are more likely to be adopted in larger establishments. However, there is not necessarily a linear relationship between establishment size band and adoption of practices. For example, the largest and smallest establishments are most likely to adopt flexible working and task variety.

Figure 3.4: Use of HPW practices by establishment size



Source: UKCESS 2011

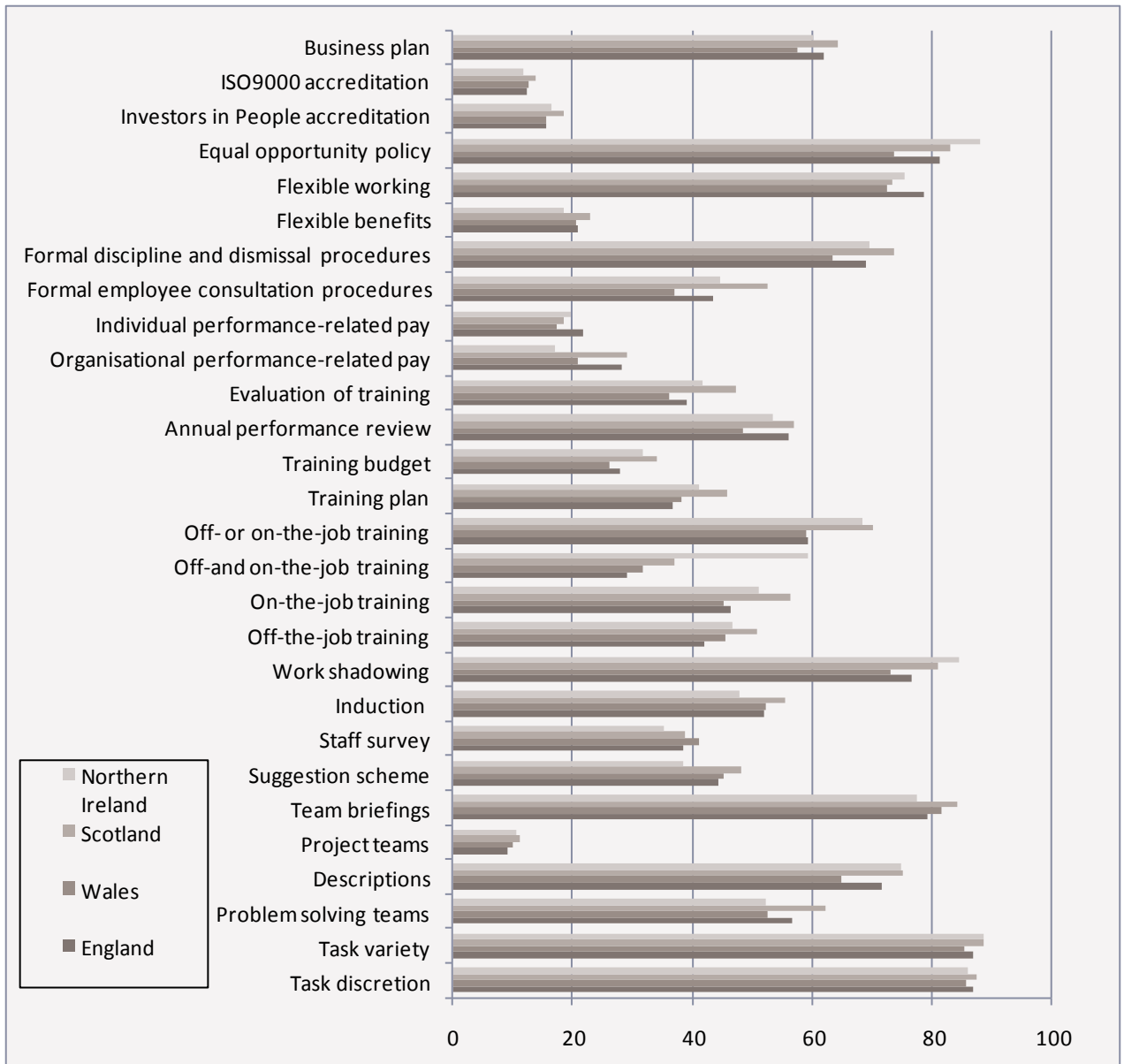
3.4 HPW uptake by country

There is also variation in the uptake of HPW practices by country. Uptake rates for task discretion and task variety are nearly uniform (Figure 3.5): between 86 per cent (Wales) and 87 per cent (Scotland) for the former, between 85 per cent (Wales) and 89 per cent (Scotland) for the latter. In comparison, the spread in uptake is wider for problem-solving teams: Northern Ireland and Wales are very similar with 52 per cent and 53 per cent respectively, followed by 57 per cent for England and 62 per cent for Scotland. The use of project teams is very low, ranging from 9 per cent (England) to 11 per cent (Scotland). The use of work shadowing is highest for Northern Ireland (85 per cent), followed by Scotland (81 per cent) and England (77 per cent); Wales has the lowest uptake rates at 73 per cent. Training budgets exist in 26 per cent of establishments in Wales, 27 per cent in England, 32 per cent in Northern Ireland and 34 per cent in Scotland. Training plans are reported to be in use by 37 per cent of establishments in England, followed closely by 38 per cent in Wales, 41 per cent in Northern Ireland and a slightly higher uptake of 46 per cent for Scotland.

Overall, establishments in Scotland use training-related practices most consistently. Of the skills acquisition practices, Scotland has the highest uptake rate for: induction, off-the-job training, on-the-job training, training plan, training budget, annual performance review and evaluation of training. Use of motivational HPW practices varies across countries and in particular Wales' uptake is substantially lower than that of other regions for formal employee consultation, formal discipline and dismissal procedures and equal opportunity policies. Across countries, uptake of the Investors in People accreditation is highest in Scotland (18 per cent), followed by Northern Ireland (17 per cent) and England and Wales (16 per cent in each).

Scotland also has the highest uptake rate for ISO9000 accreditation (14 per cent). Uptake in Northern Ireland is 12 per cent, England 12 per cent and Wales 13 per cent. Lastly, Scotland exhibits the highest rates for business plans with 64 per cent, with England at 62 per cent and Northern Ireland with 60 per cent. The lowest uptake is observed for Wales where 58 per cent of establishments have a business plan.

Figure 3.5: Uptake of HPW practices by UK nation



Source: UKCESS 2011

3.5 HPW uptake by English regional grouping

Uptake rates for task discretion and task variety are quite similar between regions within England (North, Midlands and South), with uptake rates of 86 per cent for task discretion in both the North and the Midlands; however, with 88 per cent the South is closer to Scotland's 87 per cent than to the two other English regions (Figure 3.6). For task variety, uptake varies from 86 per cent in the North region to 87 per cent in the Midlands. When looking at uptake rates for project teams within England's regions, the North has the highest uptake rate of all three regions with 11 per cent. Differences within regions are slightly more pronounced for staff suggestion schemes which are used in 47 per cent of establishments in the North, compared to 46 per cent in the Midlands and 43 per cent in the South.

Of the three English regions, higher uptakes are reported for the North for six out of eight skills acquisition practices: work shadowing, off-the-job training, on-the-job training, training plan, training budget and evaluation of training. Particularly for training plan, the uptake rates of the North are substantially higher (40 per cent) than the other two regions at 36 per cent for the Midlands and 35 per cent for the South, and are thus more similar to the uptake rates of Northern Ireland (41 per cent) or Wales (38 per cent) than the two other English regions.

The use of motivational supports is more diverse across regions. The North has a higher uptake for formal employee consultation, formal discipline and dismissal procedures and, marginally, for equal opportunity policy than the Midlands and the South. For formal employee consultation and formal discipline and dismissal procedure the North of England has an uptake rate that is substantially higher than that of the other two regions. In fact, the uptake rates for formal discipline and dismissal procedures are more similar to Scotland's 74 per cent than to the 68 per cent for the Midlands or the South.

Looking at individual regions within England, Investors in People accreditation is highest in the North (19 per cent of establishments) and lowest in the South (14 per cent). The ISO9000 accreditation rate varies from 12 per cent in the South to 13 per cent in the North. The North shows a similar rate to Wales (12 per cent). Lastly, 61 per cent of the establishments in the Midlands have a business plan, in contrast to 62 per cent in the South and in the North. Here, the individual regions are closer to the rate for England as a whole than they are to any of the other UK countries.

Figure 3.6: Use of HPW practices by English regional grouping



Source: UKCESS 2011

3.6 HPW Uptake by Largest Occupational Group in the workplace

The data set includes data on the occupation of the largest group of employees (Table 3.2), but not an overall occupation distribution of the workforce. In some cases the largest occupation group represents all of the employees within a particular workplace (this is true of 28 per cent of the establishments surveyed) but it can be as low as 20 per cent; the mean is 57 per cent. There are differences in the extent of practice use when one classifies establishments according to their largest occupation group.

With only a few exceptions, establishments in which the largest occupational group comprises professionals, associate professionals, or caring, leisure and other service occupations make the greatest use of all the involvement practices. These workplaces exhibit the highest prevalence of five practices, namely: task variety, problem solving teams, formal job descriptions, project teams and team briefings.

The pattern is similar for skills acquisition practices. Establishments where the largest occupational group consists of professionals, associate professionals or caring, leisure and other service occupations adopt a higher proportion of almost all the skills acquisition practices. For example, 43 per cent of associate professional-dominated establishments maintain a training budget in comparison to 29 per cent of establishments where sales/customer services occupations represent the largest group. These same workplaces also adopt a greater proportion of off-the-job and on-the-job training with the lowest figure for off-the-job training within these three groups being that for associate professionals with 59 per cent in comparison to 45 per cent for establishments where skilled trades represent the largest group, and the lowest figure for on-the-job training within the same three groups being that for associate professionals with 62 per cent, in comparison to 56 per cent for establishments where sales/customer service occupations dominate.

The picture is different for motivational practices, where establishments in which professionals, associate professionals, or caring, leisure and other service occupations are the largest occupational group do not consistently adopt a higher proportion of HPW practices.

Establishments with a core group of managers or of admin/clerical staff have a greater proportion of flexible working (83 per cent). However, workplaces where managers are the largest occupational group have a lower adoption of practices for virtually all other motivational practices. Organisational performance-related pay and individual performance-related pay are adopted most in establishments where sales/customer service occupations are the largest group (43 per cent) followed by those where associate professionals dominate (34 per cent) compared to an overall UK figure of 21 per cent. Use of formal employee consultation procedures and formal discipline and dismissal procedures are also more prevalent where the largest occupational group is one of the following: sales/customer services, associate professionals, professionals, caring, leisure and other service groups.

Table 3.2: Use of HPW practices by largest occupational group in the workplace (% of establishments)

	Managers	Professionals	Associate Professionals	Admin/ Clerical
Task discretion	89	89	88	90
Task variety	89	93	93	87
Problem solving teams	60	69	64	59
Formal job descriptions	56	91	85	73
Project teams	1	26	20	5
Team briefings	74	92	86	78
Suggestion scheme	36	42	47	36
Staff survey	32	43	41	31
Induction	34	58	52	43
Work shadowing	60	89	87	72
Off-the-job training	34	66	59	37
On-the-job training	32	65	62	42
Training plan	26	55	48	31
Training budget	20	52	43	27
Annual performance review	41	80	76	54
Evaluation of training	26	54	47	35
Organisational performance-related pay	25	28	34	24
Individual performance-related pay	16	25	31	19
Formal employee consultation procedures	35	54	48	41
Formal discipline/ dismissal procedures	51	84	78	69
Flexible benefits	16	33	32	20
Flexible working	83	79	79	83
Equal opportunity policy	75	90	88	80
Investors in People accreditation	11	23	20	13
ISO9000 accreditation	10	15	18	11
Business plan	59	77	74	60

<i>Table 3.2 cont.</i>	Skilled Trades	Caring, Leisure	Sales/Customer Service	Machine Operatives	Elementary
Task discretion	88	89	85	82	81
Task variety	89	93	86	81	78
Problem solving teams	53	61	54	52	50
Formal job descriptions	69	95	81	74	76
Project teams	8	23	11	12	11
Team briefings	72	96	79	66	77
Suggestion scheme	37	57	51	38	47
Staff survey	26	56	44	27	38
Induction	44	71	65	55	60
Work shadowing	79	95	86	79	83
Off-the-job training	45	72	39	44	39
On-the-job training	42	76	56	49	48
Training plan	31	72	47	36	38
Training budget	22	58	28	27	26
Annual performance review	45	86	69	52	56
Evaluation of training	35	71	48	38	42
Organisational performance-related pay	20	16	43	29	24
Individual performance-related pay	20	20	31	22	19
Formal employee consultation procedures	39	66	54	46	47
Formal discipline/ dismissal procedures	65	93	81	78	76
Flexible benefits	14	24	30	20	18
Flexible working	73	76	75	65	76
Equal opportunity policy	78	95	88	81	82
Investors in People accreditation	10	33	23	12	18
ISO9000 accreditation	13	12	13	24	12
Business plan	47	77	70	58	59

Source: UKCESS 2011

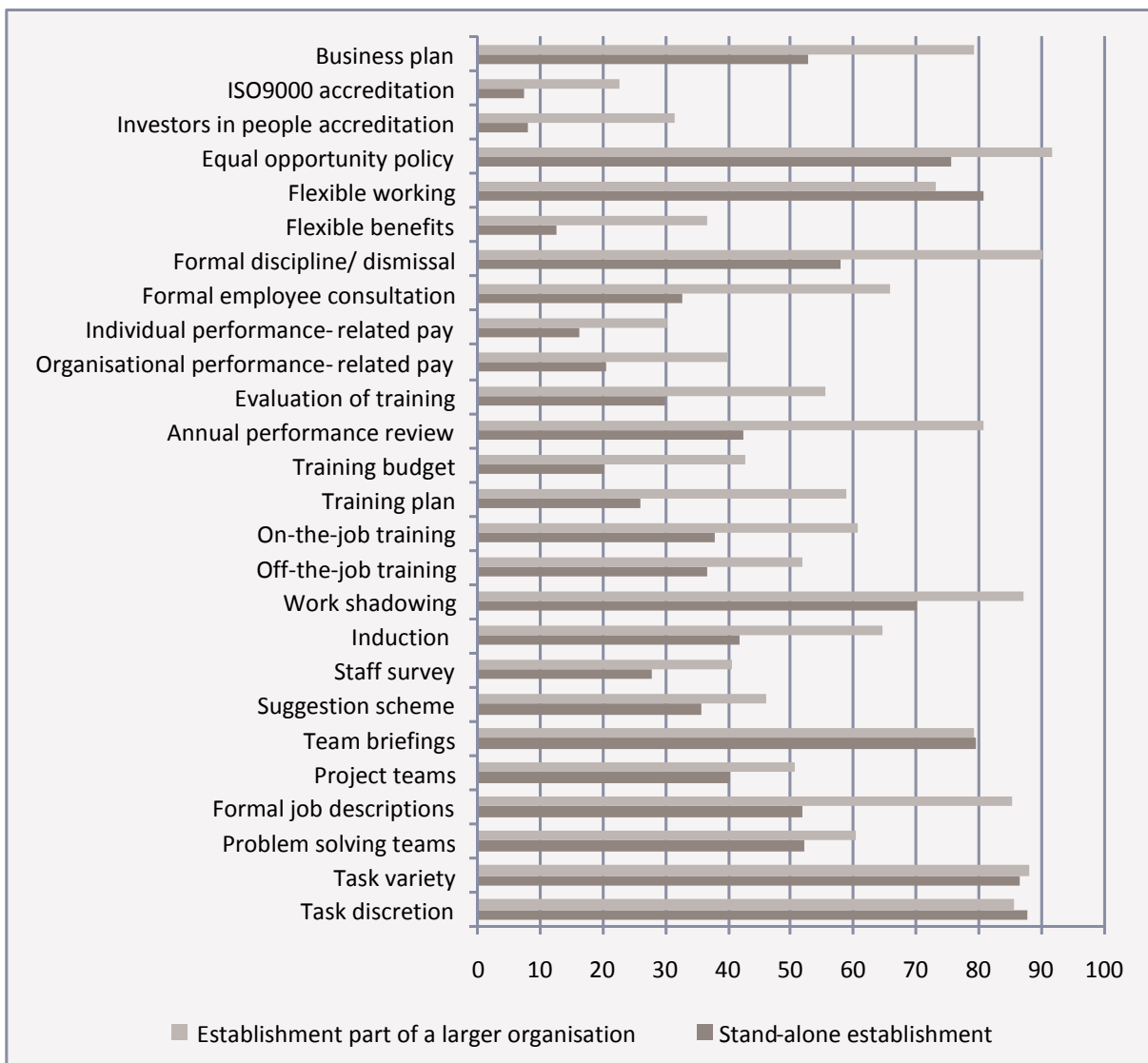
3.7 HPW Uptake in establishments that are part of a larger organisation

Workplaces were classified according to whether or not they were one of a number of establishments within a larger organisation. For employee involvement practices there is very little difference between these two groups of establishments in the case of task discretion, task variety and team briefings, but for all other such practices there is at least an eight percentage point difference in their adoption between the two types of workplaces (Figure 3.7). This is most pronounced for formal job descriptions, where the figure is 33 percentage points higher when the establishment is part of a larger organisation.

Use of all skills acquisition practices is higher when the establishment is part of a larger organisation. Most notably induction, on-the-job training, training plan, training budget, annual performance review and evaluation of training practices, where the difference between the two groups of establishments is over 20 per cent.

Motivational practices follow the same pattern as the skills acquisition practices, with the exception that more establishments that are not part of a larger organisation adopt flexible working than do establishments that are part of a larger organisation. Overall it is clear that when an establishment is within a larger organisation it is more likely to adopt HPW practices.

Figure 3.7: Use of HPW practices by membership of larger organisation



Source: UKCESS 2011

3.8 HPW Uptake by Product Market Strategy

The UK Commission's Employer Skills Survey 2011 asks about four elements of product market strategy:

- the level of customisation of the goods or services (all establishments);
- the extent to which competitive advantage does not depend on price (private sector only);
- the extent to which the establishment leads on new product/process development (private sector only);
- the extent to which the establishment competes for premium products or quality of service (private sector only).

Table 3.3 shows the questions that are used to measure the strategy variables.

Table 3.3: Questions for strategy variables in the 2011 survey

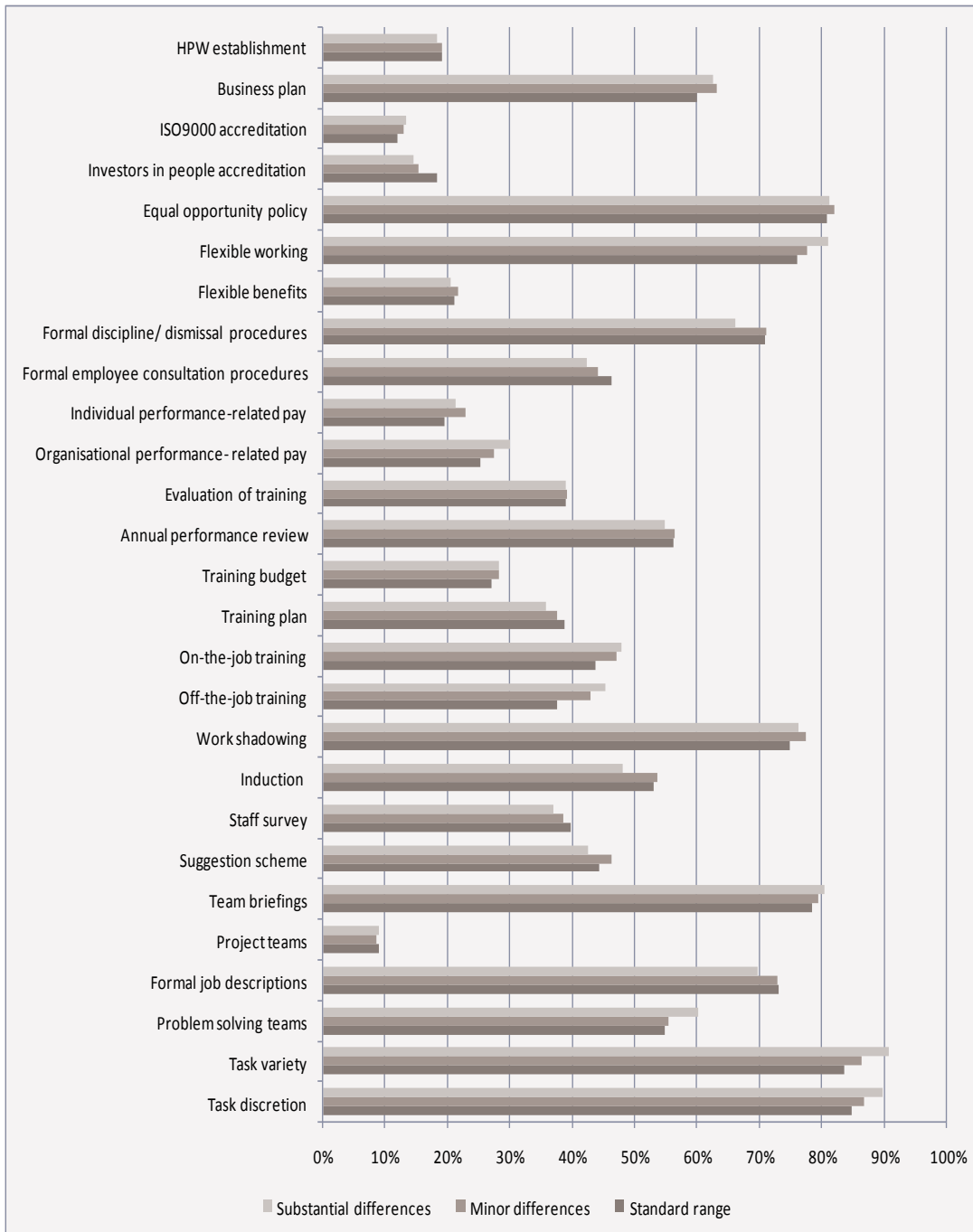
Variable	Question
Customised Production	Which of the following best describes the establishment's goods or services? <ul style="list-style-type: none"> • They are a standard range of goods or services • There are minor differences in goods or services according to customer requirements • There are substantial differences in goods or services according to customer requirements • Don't know
Non-Price competition	On a scale of 1 to 5 where would you place this establishment if one indicates that, compared to others in your industry, the competitive success of your establishment's product or services is wholly dependent on price and five that success does not depend at all on price.
Product leadership	On a scale of 1 to 5 where would you place this establishment if one indicates that, compared to others in your industry, this establishment very rarely leads the way in developing new products, services or techniques, and five that you often lead the way.
Competing on Quality	On a scale of 1 to 5 where would you place this establishment if one indicates that this establishment competes in a market for a standard or basic quality product or service, and five that you compete in a market for premium quality products or services?

Source: UKCESS 2011 questionnaire

Three of the eight employee involvement practices (task discretion, task variety and problem solving teams) are more likely to be adopted by establishments with higher levels of customisation (Figure 3.8). Only three practices, project teams (< 10 per cent), suggestion scheme (< 47 per cent) and staff survey (< 40 per cent), are adopted by less than 50 per cent of establishments irrespective of the level of customisation. For all skill acquisition and motivational practices establishments adopt a similar percentage of practices irrespective of their level of customisation.

Two of the strategy variables, the extent to which the establishment leads on new product or process development and the extent to which the establishment competes for premium products or quality of service, are associated with a greater adoption of the three concomitants, Investors in People accreditation, ISO9000 accreditation, and a business plan. The other two strategy variables, the level of customisation of goods or services and the extent to which competitive advantage does not depend on price, are not associated with the adoption of these three concomitants.

Figure 3.8: HPW practices by establishment's level of goods or services customisation



Source: UKCESS 2011

There are no consistent differences in establishments' adoption of practices according to their level of non-price dependency or competition (Table 3.4).

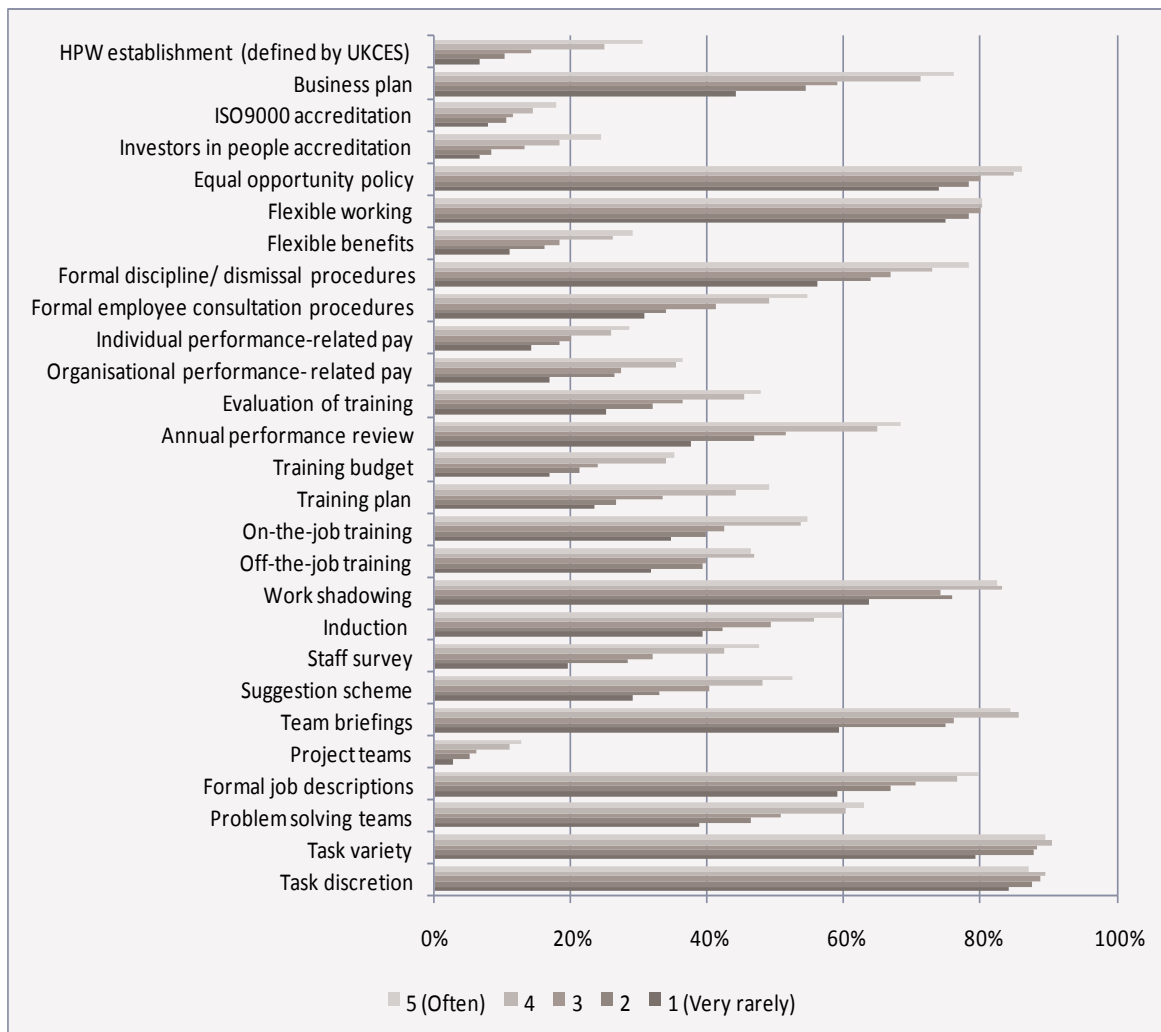
Table 3.4 HPW Practices by level of non-price dependence (% of establishments)

	1 (Wholly price dependent)	2	3	4	5 (Not at all price dependent)
Task discretion	84.7	86.3	88.0	88.8	84.6
Task variety	81.3	85.6	88.0	89.7	87.1
Problem solving teams	51.6	51.3	53.3	56.0	54.8
Formal job descriptions	65.3	69.7	69.1	67.8	66.3
Project teams	6.5	7.8	7.5	8.1	7.0
Team briefings	67.9	77.9	77.5	77.8	74.9
Suggestion scheme	37.7	43.8	44.0	42.8	39.1
Staff survey	30.4	33.5	35.7	35.9	32.3
Induction	49.7	51.5	49.4	48.2	46.7
Work shadowing	70.2	77.8	75.6	76.4	68.9
Off-the-job training	31.6	39.1	40.5	42.3	38.9
On-the-job training	37.6	47.0	44.2	46.6	41.1
Training plan	32.6	35.4	32.2	35.5	33.0
Training budget	19.5	23.4	23.5	26.8	23.8
Annual performance review	46.7	51.9	51.1	54.0	48.4
Evaluation of training	33.8	37.2	36.2	38.0	35.4
Organisational performance- related pay	25.1	31.8	31.2	32.7	28.2
Individual performance-related pay	20.8	24.4	22.8	23.4	20.5
Formal employee consultation procedures	40.5	41.1	38.8	40.7	37.7
Formal discipline/ dismissal procedures	64.7	66.7	65.9	65.1	61.9
Flexible benefits	16.7	21.9	18.9	20.6	18.8
Flexible working	77.0	78.1	77.6	81.1	79.6
Equal opportunity policy	76.1	81.0	79.5	80.2	76.8
Investors in people accreditation	14.1	12.4	11.8	13.4	13.5
ISO9000 accreditation	13.3	15.0	12.4	12.5	10.9
Business plan	56.1	59.3	57.5	60.8	58.9
HPW establishment (defined by UKCES)	14.7	17.2	16.1	18.5	16.1

Source: UKCESS 2011

For all employee involvement, skills acquisition and motivational practices, establishments that lead the way in terms of developing new products, services or techniques are more likely to adopt HPW practices than those establishments that rarely lead the way (Figure 3.9).

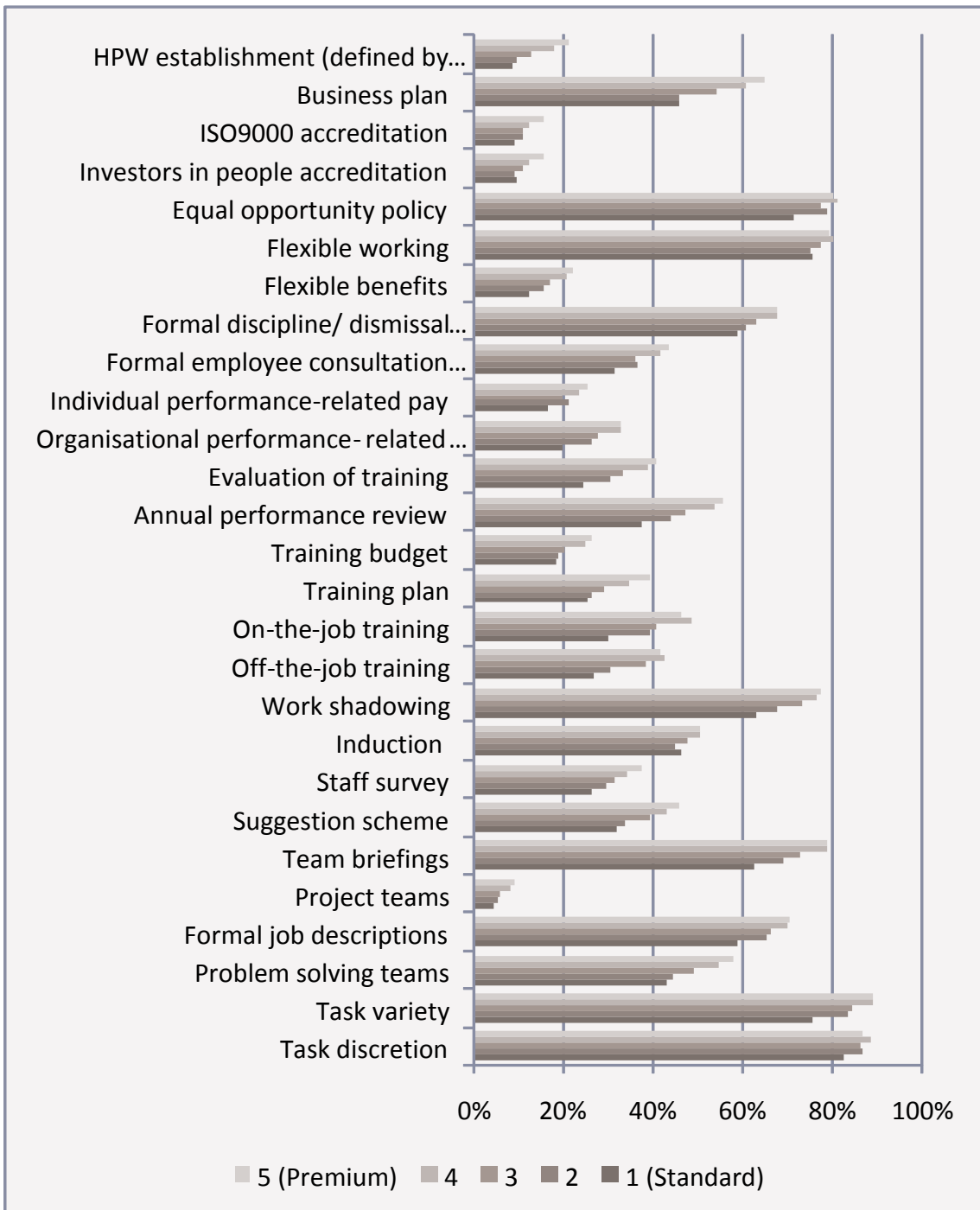
Figure 3.9 HPW practices by extent to which the establishment leads on new product/process development



Source: UKCESS 2011

The data shows that establishments that compete in markets with high or premium quality products or services (establishments which replied 3, 4 or 5 to the question) are more likely to adopt all HPW practices than establishments that produce standard or basic quality products or services (Figure 3.10).

Figure 3.10 HPW Practices by whether the establishment competes for a premium quality of product or service



Source: UKCESS 2011

3.9 Summary

The use of HPW practices in 2011 in the UK varies by practice. The most commonly used practices are discretion (87 per cent) and variety (87 per cent), with team briefings (79 per cent) and access to flexible working (78 per cent) close behind. The least commonly used practice is creating project teams (9 per cent).

The percentage of establishments using all types of HPW practices strongly reflects the size of the establishment, with practices more likely to be adopted in larger establishments. The sectors with the highest proportions of establishments adopting at least nine of the 14 practices included in the UK Commission definition of HPW are mining and quarrying, financial services, public administration, and education. Public administration, education, and health and social work establishments report the highest use of individual HPW practices.

There is variation in the uptake of HPW practices by country. Overall, establishments in Scotland use training-related practices most consistently. Use of motivational HPW practices varies across countries. Uptake rates for task discretion and task variety are quite similar between English regions. Higher uptakes are reported for the North for six out of eight skills acquisition practices, but the use of motivational supports is more diverse across regions.

Establishments in which the largest occupational group comprises professionals, associate professionals, or caring, leisure and other service occupations make the greatest use of all the involvement practices.

Three of the eight employee involvement practices (task discretion, task variety and problem solving teams) are more likely to be adopted by establishments with higher levels of customisation. For all skill acquisition and motivational practices establishments adopt a similar percentage of practices irrespective of their level of customisation. In general, establishments competing in markets with high or premium quality products or services are more likely to adopt HPW practices than establishments that produce standard or basic quality products or services.

4 The relationships between HPW practices

This section identifies the relationships between the use of HPW practices, as well as potential predictors of adopting bundles of HPW practices and being a HPW organisation. This section assesses the grouping of practices by identifying which (if any HPW practices) are linked to common factors. It uses factor analysis to assess whether there is an underlying common factor that explains the correlations amongst variables

4.1 Relationships between use of practices

There are significant relationships between the use of most practices but some are relatively weak. The analysis reveals that the relationships between practices within the same groupings are stronger than those involving pairs that span groups. The average correlation between pairs of practices within the same grouping is equal to 0.49, whereas the average correlation between pairs that span over groups is equal to 0.30, a statistically significant difference. These correlations between practices in the same group are shown in Tables A.3 to A.6 (Annex A). If the correlations between practices were approximately uniform across all pairs then this would suggest that all HPW practices tend to be used together. However, as they are not this indicates a more fragmented use; and as sets of HPW practices are not uniformly correlated, this suggests that there are various dimensions to HPW systems.

Task discretion and variety are only weakly correlated with the other practices in the group whereas they correlate quite strongly with each other. This suggests two distinct dimensions/factors within the involvement group of practices consistent with the classification into role and organisational involvement. In the case of skills acquisition, all correlations are high suggesting there is only one underlying factor, whereas the motivational practices are only weakly correlated indicating fragmented use and the lack of a common factor.

The use of factor analysis firstly confirms that a single common factor does not underlie all the practices. The analysis shows that there are three groupings of practices:

- role involvement (task discretion and variety);
- organisational involvement (problem solving teams, formal job descriptions; project teams; team briefings; suggestion scheme; staff survey; and annual performance review);

- skills and knowledge acquisition practices (induction; work shadowing; off-the-job training; on-the-job training; training plan; training budget; and evaluation of training).

These groupings differ from those suggested by the literature (Employee involvement, Skills acquisition, and Motivational practices).

Table 4.1 shows the results of the factor analysis for the relevant HPW practices, with the figures in bold indicating which practices are underpinned by the factors identified. Factor 1 corresponds to the organisational involvement grouping, factor 2 to the skills and knowledge acquisition grouping, and factor 3 to the role involvement grouping.

Table 4.1: Factor analysis of Involvement and Skills acquisition practices

	Factor 1	Factor 2	Factor 3
Task discretion	-0.0560	-0.0255	0.6918
Task variety	0.0854	0.1228	0.7234
Problem solving teams	0.6957	0.3186	0.0471
Formal job descriptions	0.5599	0.4475	0.0607
Project teams	0.6658	0.2941	0.0937
Team briefings	0.9274	0.3000	-0.0292
Suggestion scheme	0.7558	0.2514	0.0096
Staff Survey	0.7669	0.2718	0.0282
Induction	0.3774	0.7510	-0.0193
Work shadowing	0.4494	0.5380	0.1201
Off-the-job training	0.2436	0.6505	0.0932
On-the-job training	0.3046	0.8051	0.0170
Training Plan	0.4852	0.5566	0.0636
Training Budget	0.4357	0.5401	0.1297
Evaluation of training	0.3370	0.7544	0.0643
Annual performance review	0.6258	0.4830	0.1372
Variance	4.69779	3.95975	1.08590

Note: The numbers in bold represent those which are higher than 0.5.

There are significant relationships between the use of some of the practices in the UK Commission's time-series definition of HPW organisations (Tables A.4 and A.5). Providing training, having a training plan, a training budget, evaluating training, having a business plan, employee consultation and performing annual reviews are practices that are highly correlated with each other. This suggests that they usually are interconnected and implemented together. The correlations between all other practices are lower, suggesting no grouping between them.

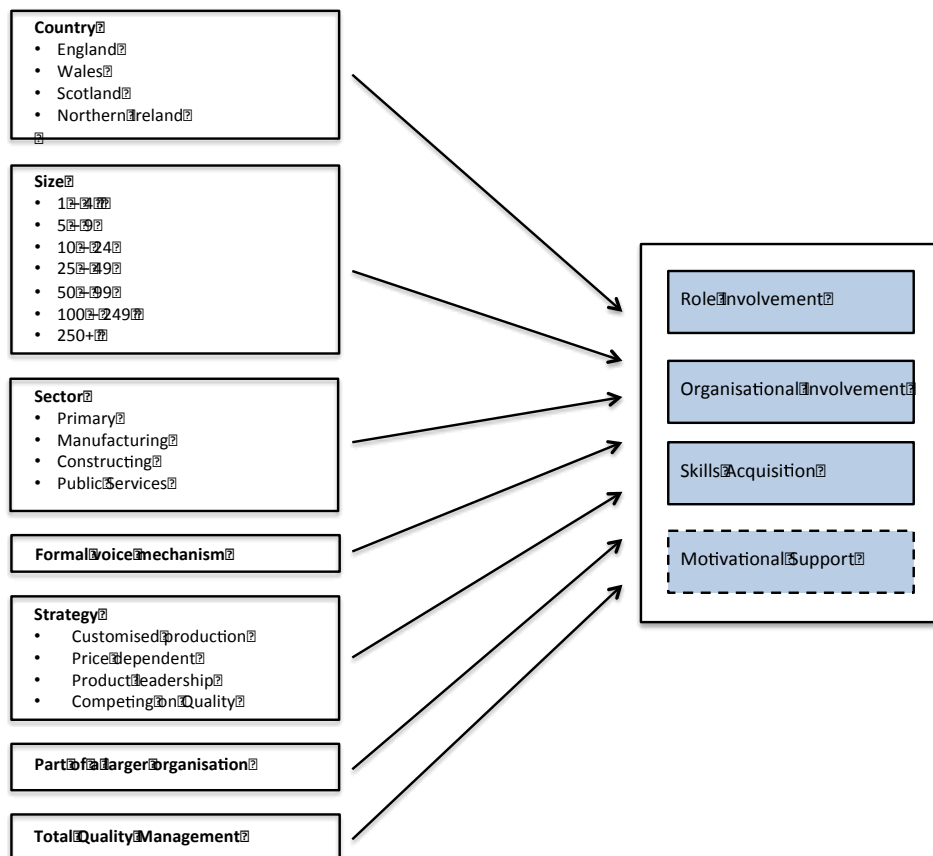
4.2 Predictors of being a HPW organisation

The results in Table 4.1 suggest that we can meaningfully measure three dimensions of HPW, and use composite measures to test potential predictors of HPW systems and their effects. In the case of motivational supports, each practice has to be measured separately for such an analysis.

Predictors included in the analysis are listed here and represented in Figure 4.1:

- country;
- establishment size;
- broad industrial sector;
- whether the organisation has a formal employee voice mechanism;
- strategy (only private sector organisations were asked about price dependency, product leadership and competing on quality);
- whether the establishment is part of a larger organisation;
- whether the establishment adopts a total quality management system (ISO 9000 is used as a proxy).

Figure 4.1: Predictors of elements of HPW



The significance of each of the independent variables is assessed using t-statistics, which test whether a model coefficient is significantly different from 0. Given the large sample, the 5 per cent level is used as the yardstick. The regression analysis shows whether establishments are more or less likely to use HPW practices compared to a reference category. This category represents workplaces located in England, operating in Private Services, and employing over 249 employees. Regression analysis is run for the whole economy, private sector only, and public sector only. It is then run with the inclusion of the strategy variables for the private sector only.

Predictors of HPW for the three groupings of practices (role involvement; organisational involvement; and skills acquisition) for the whole economy are shown in Table 4.2.

Table 4.2: Predictors of HPW subsystems (whole economy)

Independent Variable	Role Involvement		Organisational Involvement		Skills Acquisition		
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	
Northern Ireland	.008	0.66	.002	0.10	.087	2.63	**
Scotland	.009	0.79	-.010	-0.50	.060	2.26	*
Wales	-.011	-0.93	-.048	-2.38	.001	0.07	
England							
Primary	.029	1.80	-.287	-6.65	-.018	-0.44	**
Manufacturing	-.012	-1.32	-.119	-7.43	-.213	-10.59	**
Construction	.006	0.67	-.222	-10.49	-.102	-4.28	**
Public Services	.065	8.74	.128	12.14	.114	7.51	**
Private Services							
Size 1-4	.106	6.70	-.821	-43.86	-.666	-35.09	**
Size 5-9	.088	5.66	-.555	-36.00	-.270	-18.96	**
Size 10-24	.048	3.14	-.032	-2.15	-.112	-8.74	**
Size 25-49	.022	1.39	-.012	-0.85	-.015	-1.25	
Size 50-99	-.011	-0.68	-.005	-0.35	.009	0.77	
Size 100-249	-.012	-0.67	.010	0.63	.006	0.48	
Size >=250							
Formal voice mechanisms ¹	.052	8.51	.421	34.84	.352	23.77	**
Part of a larger organisation	-.002	-0.39	.635	56.10	.225	16.69	**
Customised production	.032	9.73	.008	1.60	.051	7.27	**
Total quality management	.002	0.36	.135	12.70	.119	8.62	**
Constant	.372	20.76	.778	35.09	1.146	48.12	**

* = $p < .05$, ** = $p < .01$

Role involvement practices are more prevalent in public services relative to private services, and establishments with less than 25 employees relative to those with more than 249 employees (see Table 4.2). They are also associated with formal employee consultation procedures and customised production. They are not however related to being part of a wider organisation or to total quality management.

¹ ISO9000 is used as a measure of Total Quality Management and formal employee consultation as a measure of Employee Voice.

The picture is not as consistent for the regression for organisational involvement, where significant coefficients are both positive and negative. Organisational involvement is more prevalent in public services and less prevalent in primary industries, construction and manufacturing relative to private services. Workplaces with less than 25 employees are less likely to practice organisational involvement relative to those with more than 249 employees. Formal employee consultation procedures have a positive relationship with organisational involvement. Being part of a wider organisation and total quality management are significantly positively related to organisational involvement, but customised production is unrelated to it. Region is also significant: establishments in Northern Ireland and Scotland make more use of organisational involvement practices than those in England.

The results for skills acquisition are similar to those for organisational involvement. Use of skills acquisition practices is more prevalent in public services relative to private services and less likely to be implemented in construction or manufacturing. Workplaces with less than 25 employees are less likely to practice skills acquisition. Formal employee consultation procedures, being part of a wider organisation and total quality management are significantly positively related to skills acquisition as they were for organisational involvement. Finally, unlike organisation involvement, customised production is positively related to skills acquisition.

Regional differences exist: organisational involvement is less prevalent, relative to England, in establishments located in Wales, and more prevalent in Northern Ireland and Scotland. Organisational performance-related pay is less prevalent in Northern Ireland, and workplaces with an equal opportunity policy are more prevalent there than in England. For establishments in Scotland, individual performance-related pay and flexible working are less prevalent relative to England.

Analysis of the private and public sector separately reveals differences in relation to customised production (Table A.9). In the private sector this variable is negatively related to both organisational involvement and skills acquisition but unrelated to role involvement. In contrast it is highly significantly positively related to all three dimensions in the public sector. In the private sector, the less production or service is customised the greater the level of organisational involvement and skills acquisition; in the public sector the opposite is true and the more production or service is customised, the greater the level of role involvement, organisational involvement and skills acquisition.

The regression results for the motivational supports (Organisation performance-related pay; Individual performance related pay; Formal discipline and dismissal procedures; Flexible benefits; Flexible work; and Equal opportunity policies) are shown in Table A.10. Formal voice mechanism is related positively to all of the motivational practices. Being part of a larger organisation is also related to all the practices, but the nature of the association varies between practices (for example, flexible working is less likely in workplaces that are part of a larger organisation). Public services is positively associated with formal discipline procedures, and equal opportunity policies is negatively related to organisational performance-related pay, individual performance-related pay and flexible working, and unrelated to flexible benefits. Region is significantly related to organisational performance-related pay, individual performance-related pay, flexible working and having an equal opportunity policy. All are less frequently adopted in Wales than in England. Total quality management is positively associated with all the practices, with the exception of flexible working which is unrelated to it. Finally, customised production is also positively related to all but one of the practices, in this case formal discipline procedure.

There are few differences in the predictors of motivational supports when separate regressions are run for the private and public sectors (Tables A.11 and A.12). Manufacturing workplaces in the private sector are less likely to have individual performance-related pay than are those in services and other activities, when the type of activity has no effect on this in the public sector. A minor difference occurs for formal discipline procedures: in the private sector workplaces below 25 employees are less likely to have these, but in the public sector the cut-off point is below 10 employees. The biggest difference is within customised production. In private workplaces the more customised the production or service the more likely are they to have organisational performance-related pay, individual performance-related pay, and the less likely they are to have formal discipline procedures; whereas in the public sector workplaces the more customised the production or service the less likely are they to have organisational performance-related pay, individual performance-related pay, and flexible working, and the more likely they are to have formal discipline procedures and equal opportunity policies.

When the strategy variables are included in the private sector analysis, some are significant (Table 4.3). Product leadership and competing on quality are positively related to organisational involvement. Competing on quality is positively related to role involvement and product leadership to skills acquisition. Customised production is positively related to skills acquisition.

Table 4.3: Predictors of HPW Subsystems with inclusion of strategy variables (Private Sector)

Dependent Variable	Role Involvement		Organisational Involvement		Skills Acquisition	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Independent Variable						
Northern Ireland	.003	0.27	.014	0.45	.103	2.47 *
Scotland	.004	0.32	.021	0.82	.082	2.59 **
Wales	-.022	-1.58	-.073	-2.99 **	-.015	-0.57
England						
Primary	.035	2.23	-.249	-5.47 **	-.003	-0.09
Manufacturing	-.003	-0.34	-.081	-4.97 **	-.183	-8.94 **
Construction	.014	1.49	-.147	-6.78 **	-.054	-2.19 *
Public Services						
Private Services						
Size 1-4	.139	6.19	-.866	-34.73 **	-.702	-29.62 **
Size 5-9	.119	5.38	-.520	-25.90 **	-.288	-15.91 **
Size 10-24	.073	3.32	.001	0.03	-.123	-7.45 **
Size 25-49	.031	1.41	.008	0.45	-.020	-1.26
Size 50-99	-.001	-0.08	.005	0.29	.006	0.40
Size 100-249	-.023	-0.90	-.007	-0.33	-.010	-0.59
Size >=250						
Formal voice mechanisms	.051	7.64	.407	30.30 **	.339	20.59 **
Part of a larger organisation	-.010	-1.32	.623	44.81 **	.211	13.33 *
Customised production	.019	4.77	.001	0.10	.023	2.75 **
Non-price competition	.000	0.08	-.004	-0.98	-.001	-0.10
Product leadership	.003	1.25	.032	6.97 **	.017	2.91 *
Competing on Quality	.009	2.69	.021	3.92 **	.025	3.63
Total quality management	.009	1.10	.162	12.96 **	.143	9.24 *
Constant	.313	11.21	.570	16.28 **	1.039	26.03 *

* = $p < .05$ ** = $p < .01$

However, the inclusion of the strategy variables into the motivational supports models reduces considerably the associations involving customised production. Product leadership is significantly related to all the motivational supports with the exception of equal opportunity policies. Non-price competition and competing on quality are unrelated to all motivational supports. Having Investors in People and a business plan are both related to all motivational supports with one exception as Investors in People is not significant for organisational performance-related pay (Table 4.4).

Table 4.4: Predictors of HPW Subsystems including Investors in people and business plan as explanatory variables (whole economy)

Independent Variable	Role Involvement		Organisational Involvement			Skills Acquisition			
	Beta Coeff.	t-value	Beta Coeff.	t-value		Beta Coeff.	t-value		
Northern Ireland	.008	0.70	.011	0.54		.092	3.01	**	
Scotland	.010	0.88	.001	0.05		.072	2.87	**	
Wales	-.009	-0.79	-.046	-2.40	*	.008	0.40		
England									
Primary	.032	1.93	-.269	-6.56	**	.001	0.03		
Manufacturing	-.007	-0.81	-.076	-4.80	**	-.166	-8.29	**	
Construction	.015	1.65	-.160	-7.70	**	-.033	-1.41		
Public Services	.064	8.45	.103	9.78	**	.083	5.80	**	
Private Services									
Size 1-4	.116	7.29	**	-.752	-43.59	**	-.588	-32.97	**
Size 5-9	.096	6.13	**	-.502	-35.26	**	-.208	-15.72	**
Size 10-24	.052	3.39	**	-.005	-0.43		-.080	-6.77	**
Size 25-49	.022	1.43		-.005	-0.39		-.005	-0.47	
Size 50-99	-.011	-0.66		-.002	-0.16		.014	1.27	
Size 100-249	-.012	-0.69		.009	0.61		.004	0.39	
Size >=250									
Formal voice mechanisms	.041	6.69	**	.338	28.70	**	.263	18.03	**
Part of a larger organisation	-.010	-1.51		.565	50.64	**	.150	11.21	**
Customised production	.031	9.37	**	.002	0.55		.044	6.56	**
Total quality management	-.003	-0.43		.084	8.36	**	.061	4.52	**
Investors in People	-.001	-0.21		.119	12.41	**	.129	9.43	**
Business Plan	.057	7.82	**	.393	24.93	**	.422	23.85	**
Constant	.338	18.09	**	.510	22.12	**	.856	34.47	**

* = $p < .05$ ** = $p < .01$

HPW Organisation

This section uses the UK Commission's time-series definition of HPW, in which a score of nine out of 14 on a composite measure combining 14 indicators from the 2011 Employer Skills Survey (where each indicator accounted for one) was considered to indicate that an establishment was HPW. Total quality management, Investors in People, having a business plan and formal voice mechanism are excluded from the predictors in the regression equation as they are included in the 14 indicators composing the UK Commission's time-series definition (the binary dependent variable).

Four different regression analyses were run: whole economy, private sector only, public sector only, and private sector including strategy variables. Across all models, region is not significant, the small-sized workplace has a negative impact, and being part of a larger organisation has a positive impact on the likelihood of being a HPW organisation (Table 4.5). Manufacturing and construction establishments are significantly less likely to be HPW than those in the private service sector. The public sector is significantly more likely to have it than private services. Customised production is positively related to the probability of being a HPW establishment when considering the whole economy (model 1) and the public sector (model 3), but is negatively related to the private sector (model 2). This relationship changes once the strategy variables are included, as both product leadership and competing on quality are positively associated with being a HPW establishment, while non-price competition is negatively related to it (model 4).

Table 4.5: Predictors for HPW establishment (UK Commission time-series definition)

Independent variable	Whole economy (Model 1)		Private sector (Model 2)		Public sector (Model 3)		Private sector, with strategy variables (Model 4)	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.124	-0.57	-.130	-0.59	-.130	-0.60	.012	0.04
Scotland	-.074	-0.65	-.058	-0.52	-.070	-0.62	-.031	-0.24
Wales	-.104	-1.29	-.094	-1.18	-.103	-1.29	-.121	-1.27
England								
Primary	-.184	-0.84	-.214	-0.99	-.213	-0.98	-.142	-0.63
Manufacturing	-.434	-5.34**	-.411	-4.95**	-.414	-5.07**	-.356	-4.20**
Construction	-.570	-6.38**	-.557	-6.13**	-.562	-6.27**	-.435	-4.54**
Public Services	.446	5.92**						
Private Services								
Size 1-4	-3.898	-25.75**	-3.958	-26.43**	-3.907	-25.94**	-3.614	-19.25**
Size 5-9	-3.053	-21.25**	-3.106	-21.75**	-3.066	-21.39**	-2.737	-15.29**
Size 10-24	-2.194	-15.43**	-2.239	-15.85**	-2.206	-15.56**	-1.916	-10.79**
Size 25-49	-1.660	-11.53**	-1.672	-11.67**	-1.660	-11.57**	-1.418	-7.87**
Size 50-99	-1.291	-8.70**	-1.290	-8.75**	-1.286	-8.70**	-1.013	-5.48**
Size 100-249	-.672	-4.29**	-.670	-4.31**	-.668	-4.28**	-.590	-3.01**
Size >=250								
Part of a larger organisation	1.617	30.73**	1.590	31.15**	1.601	30.49**	1.595	26.79**
Customised production	.123	4.02**	-.051	-2.08*	.143	4.40**	.016	0.44
Non-price competition							-.055	-2.32*
Product leadership							.216	8.55**
Competing on Quality							.118	4.81**
Constant	.704	4.53**	1.122	7.71	.970	6.73**	-.477	-2.19*

* = $p < .05$ ** = $p < .01$

4.3 Potential outcome concomitants for HPW

The UK Commission's Employer Skills Survey does not include measures of organisational performance, but a number of variables can be identified that may be considered as outcomes of HPW practices or systems, which may themselves impact on performance. These relate to recruitment, retention, training, and skills deficiencies. Regression analysis is used to assess the extent to which they are related to the three dimensions of the HPW and each motivational practices².

² This method only tests a relationship so if relationships are found this does not necessarily mean that the elements of the HPW cause the outcomes we have tested.

Recruitment and retention

The relationship between the elements of HPW and recruitment and retention problems is assessed in terms of two measures: the number of hard-to-fill vacancies as a percentage of total employment and whether the establishment has difficulty retaining staff. Role and organisational involvement are both negatively related to these measures but only in the case of difficulty retaining staff is this relationship statistically significant (Table 4.6). However, skills acquisition is significantly positively related to both variables; this may suggest the direction of causality is from recruitment and retention problems to skill acquisition or that organisations that are investing in training have higher requirements or more exacting standards (both when they are looking to recruit new employees and once such individuals have been engaged), which they may not readily be able to achieve. The results also show that motivational practices are not strongly associated with recruitment and retention problems, with one exception: there is a positive relationship between individual performance-related pay and difficulty retaining staff.

Table 4.6: Regression results for recruitment and retention

Independent Variable	Hard to Fill Vacancies (%)		Difficulty retaining staff	
	Beta Coeff.	t-value	Beta Coeff.	t-value
Role involvement	-0.448	-1.12	-0.278	-4.09 **
Organisational involvement	-0.278	-1.80	-0.135	-3.39 **
Skills/knowledge acquisition	0.626	3.73 **	0.184	6.54 **
Awards organisational performance-related pay	0.635	0.94	0.179	1.84
Individual performance-related pay	0.673	1.14	0.565	5.68 **
Formal procedures	0.932	1.74	0.278	1.81
Equal opportunities policy	-0.439	-0.73	0.061	0.41
Flexible benefits	0.667	0.81	0.090	0.85
Flexible working	0.111	0.25	-0.218	-2.34 *
Equal opportunities policy	-0.439	-0.73	0.061	0.41

* = $p < .05$ ** = $p < .01$

Training

Training is measured by the average of the numbers of days training employees receive at an establishment and the percentage of establishment staff trained. Skill acquisition is positively related to both variables, indicating that establishments with these particular policies engage in more training activity (see Table 4.7). However role and organisational involvement are not related to training days or the amount of trained staff, but organisational involvement is negatively related to the amount of trained staff, a result which is hard to explain and may be coincidental. Of the motivational supports only flexible working is related – positively – to the average number of days training.

Table 4.7: Regression results for extent of training

Independent Variable	Average days training (per employee)		Staff trained (%)	
	Beta Coeff.	t-value	Beta Coeff.	t-value
Role involvement	-0.045	-0.37	0.441	0.58
Organisational involvement	0.038	0.50	-1.694	-2.81 **
Skills/knowledge acquisition	1.859	20.59 **	18.042	34.23 **
Awards organisational performance-related pay	-0.312	-1.38	-2.136	-1.64
Individual performance-related pay	0.541	1.73	-2.478	-1.64
Formal procedures	0.067	0.31	2.514	1.87
Flexible benefits	-0.443	-1.84	-0.075	-0.03
Flexible work	0.570	3.35 **	-0.696	-0.62
Equal opportunities policy	0.040	0.23	0.255	0.19

* = $p < .05$ ** = $p < .01$

Skills deficiencies

Skills deficiencies are measured by whether the establishment has skills gaps, in the sense that employees are not fully proficient at their jobs, and by skills shortage vacancies. Neither measure of involvement is related to skills shortage vacancies, but role involvement is positive and significant in the case of skills gaps (see Table 4.8). Skill acquisition is positively related to both skills gap and skills shortage vacancies. Again this may reflect a reverse direction of causality or that establishments that have implemented skill acquisition to a greater extent have higher standards and requirements than those that have not and as a result their managers perceive more skills deficiencies than their less exacting counterparts.

Table 4.8: Regression results for skills deficiencies

Independent Variable	Skills gap			Skills shortage vacancies	
	Beta Coeff.	t-value		Beta Coeff.	t-value
Role involvement	-0.742	-3.35	**	0.002	0.02
Organisational involvement	-0.136	-1.09		-0.052	-1.30
Skills/knowledge acquisition	0.612	7.60	**	0.216	5.93 **
Awards organisational performance-related pay	0.785	2.26	*	0.247	2.35 *
Individual performance-related pay	0.542	1.53		0.570	5.50 **
Formal procedures	0.427	1.06		0.142	0.69
Flexible benefits	-0.126	-0.42		0.254	2.24 *
Flexible work	-0.582	-2.15	*	0.016	0.18
Equal opportunities policy	0.118	0.28		-0.253	-1.24

* = $p < .05$ ** = $p < .01$

4.4 Summary

There are significant relationships between the use of some of the practices in the UK Commission definition of HPW organisations. Providing training, having a training plan, a training budget, evaluating training, having a business plan, employee consultation and performing annual reviews are practices which are highly correlated with each other. This suggests that they usually are interconnected and implemented together. Across the full range of HPW practices, there are significant relationships between the use of most practices but they are relatively weak. The analysis shows that there are three groupings of practices:

- role involvement, including task discretion and variety;
- organisational involvement;
- skills and knowledge acquisition practices.

For the UK Commission's definition of being a HPW establishment, predictors include size (with smaller workplaces less likely to be HPW) and being part of a larger organisation (more likely). All else being equal, establishments in the manufacturing and construction groups are significantly less likely to be a HPW organisation, and those in the public sector are significantly more likely than those in private services. Region is not a predictor. Customised production is positively related to the probability of being a HPW establishment when considering the whole economy and the public sector.

Establishments which lead the way in terms of developing new products, services or techniques, are more likely to adopt HPW practices. Establishments stating that they compete in markets with high or premium quality products or services are more likely to adopt HPW practices than establishments that produce standard or basic quality products or services.

The relationship between HPW and recruitment and retention problems (the number of hard-to-fill vacancies as a percentage of total employment and whether the establishment has difficulty retaining staff) is mixed. The skills acquisition practices are significantly positively related to both variables. Motivational practices are not strongly associated with recruitment and retention problems, but there is a positive relationship between individual performance-related pay and difficulty retaining staff.

Training is measured by the average of the numbers of days training employees receive at an establishment and the percentage of establishment staff trained. Skill acquisition practices are positively related to both variables.

Skills deficiencies are measured by whether the establishment has skills gaps and skills shortage vacancies. Role involvement practices are positively related to skills gaps, and skill acquisition practices are positively related to both skills gap and skills shortage vacancies. These findings may reflect organisations with skill-related challenges having adopted HPW practices, but the direction of causality is unclear.

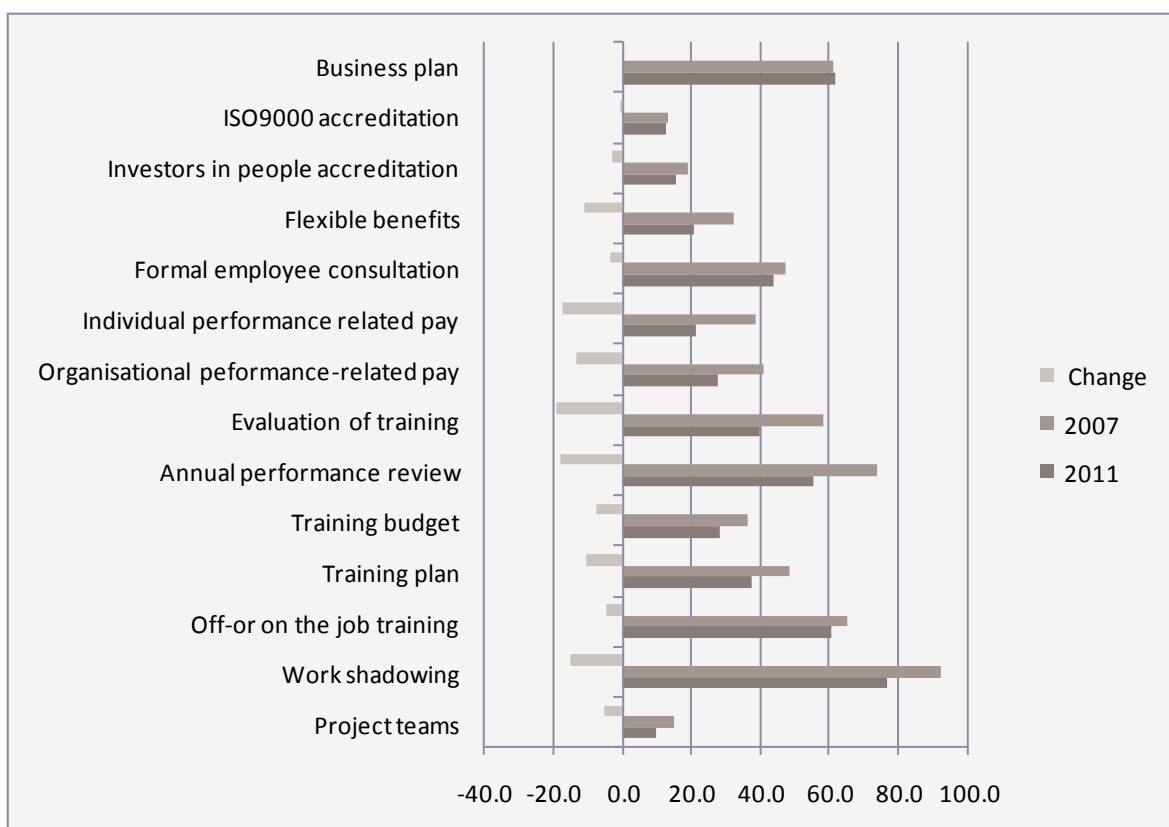
5 Change in uptake of HPWPs (2007 to 2011)

This chapter describes the change in the uptake of HPWPs between 2007 and 2011. The analysis covers practices that were asked about in both 2007 and 2011. It then identifies changes in predictors of being a HPW organisation.

5.1 Use of HPW practices

Figure 5.1 shows the percentage of establishments with at least two people working at that site that had each of the practices in 2007 and 2011, as well as the change.

Figure 5.1: HPW use in 2007 and 2011, and change



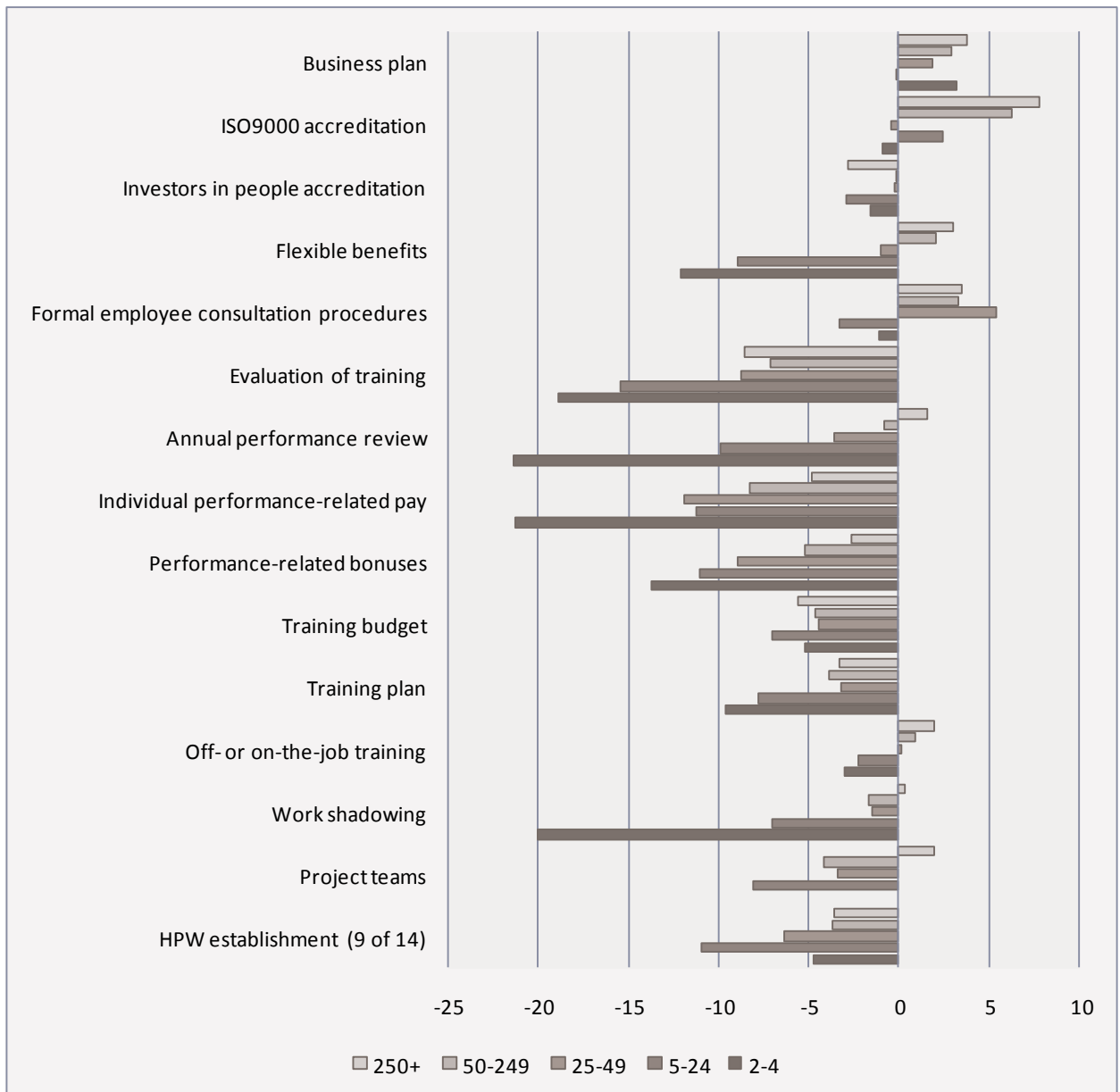
Source: UKCESS 2011 and UKEPS 2007.

Base size: 2011 N = 44691; 2007 N = 12557

There has been a decline in the use of almost all the practices between 2007 and 2011 in the UK. Work shadowing, annual performance review, evaluation of training and individual performance-related pay experienced the greatest absolute decreases. However, the proportion of establishments with a business plan increased by 0.3 percentage points between 2007 and 2011.

The change in use of HPW practices varied by establishment size (Figure 5.2). In large establishments (250 or more employees), the proportion using project teams, training, annual performance review, employee consultation, flexible benefits, ISO9000 and with a business plan increased. The greatest decline in the proportion of establishments using individual HPW practices was for the smallest establishments (those employing between 2 and 4 individuals).

Figure 5.2: HPW practices change 2011-2007 by establishment size band

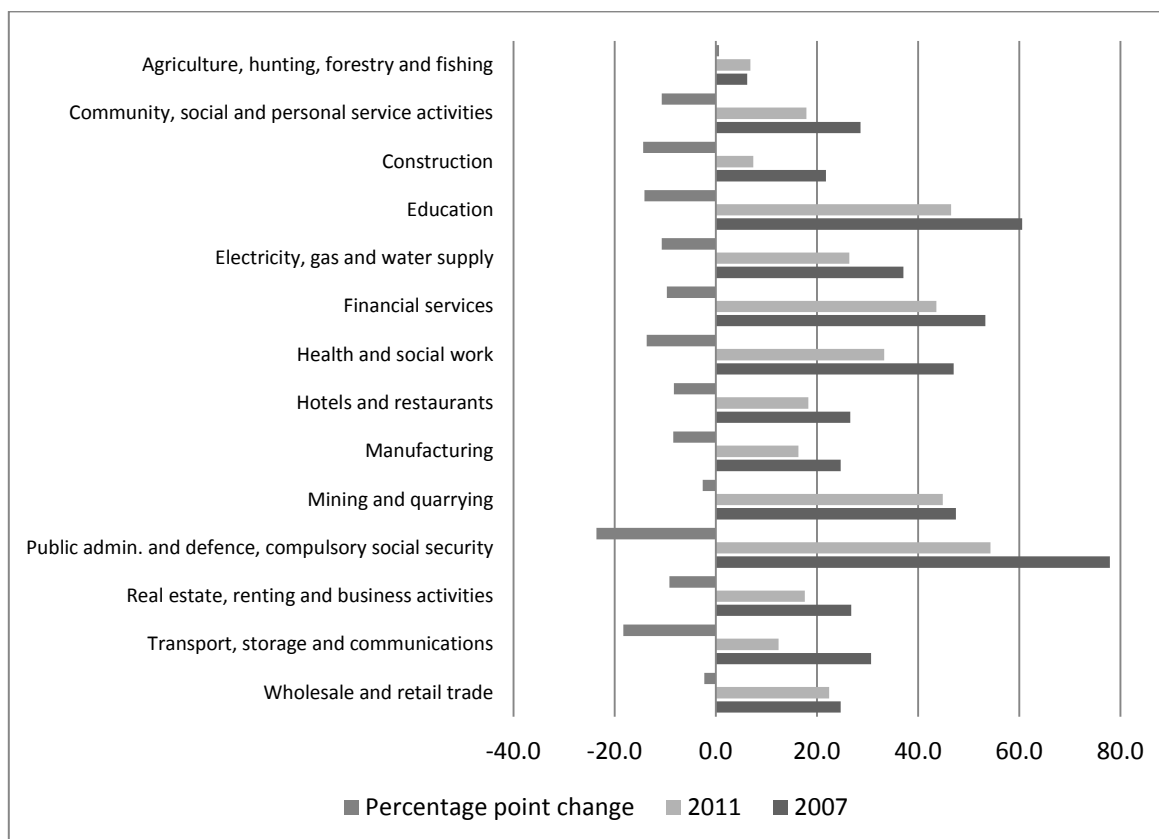


Source: UKCESS 2011 and UKEPS 2007.

Bases: $N \geq 873$ and ≤ 24059

The percentage of establishments that could be classified as HPW organisations also declined in the majority of sectors between 2007 and 2011 (Figure 5.3). The greatest decline (in percentage point terms) was in the public administration sector (24 pp). The agricultural sector saw a small increase (1pp).

Figure 5.3: Likelihood of being a HPW establishment by sector



Source: UKCESS 2011 and UKEPS 2007.

5.2 Predictors of being a HPW organisation

There are a number of potential predictors of HPW which were included in the 2007 and 2011 surveys. These include: country; industrial sector; sector of ownership; establishment size band; whether the establishment has a formal voice mechanism for employees; whether the establishment is part of a larger organisation; and whether the establishment adopts a total quality management approach.

Predictors varied between 2007 and 2011. Establishments in Wales had a lower level of practice use than the other countries in 2011 (but not in 2007), as did establishments in the construction sector and those in public services.

The predictors of Investors in People, ISO9000 and business plan did not differ greatly between 2007 and 2011. The most notable changes over time are in the public services sector. In 2007 its achievement of ISO9000 was no different than in the private services but in 2011 it was significantly lower; while in 2007 having a business plan was more likely in public services than private services but by 2011 this difference had disappeared.

Analysis was also undertaken on the predictors of being a HPW organisation (having at least nine of the 14 practices) in 2007 and 2011. There are two differences between the two years. Establishments in the primary sector were less likely than those in other sectors to be HPW organisations in 2007, but not in 2011. However, establishments in the construction sector were less likely than those in other sectors to be HPW organisations in 2011, but not in 2007 (Table 5.1)

Table 5.1: Predictors of being a HPW organisation (2007 and 2011)

Independent Variable	Dependent Variable	HPW organisation – 2007		HPW organisation - 2011	
		Beta Coeff.	T value	Beta Coeff.	T value
Northern Ireland		-.119	-0.50	-.135	-0.62
Scotland		-.029	-0.18	-.075	-0.66
Wales		.138	0.54	-.109	-1.36
England					
Primary		-.983	-4.64**	-.199	-0.92
Manufacturing		-.306	-2.50**	-.400	-4.90**
Construction		.125	0.65	-.551	-6.14**
Public Services		1.921	7.91**	.421	5.69**
Private Services					
Size 1-4		-3.100	-15.95**	-3.886	-25.79**
Size 5-9		-2.477	-14.98**	-3.050	-21.27**
Size 10-24		-1.691	-10.77**	-2.191	-15.45**
Size 25-49		-1.232	-7.79**	-1.658	-11.55**
Size 50-99		-.950	-6.12**	-1.284	-8.68**
Size 100-249		-.634	-3.64**	-.668	-4.28**
Size >=250					
Part of a larger organisation		1.573	12.11**	1.601	30.47**
Constant		.724	4.33**	.945	-6.54**

The predictors of Investors in People, ISO9000 and business plan did not differ greatly between 2007 and 2011 (Table A.2).

Examining the total use of HPW practices covered in the surveys shows that 40 per cent of establishments implement between two and five practices, 34 per cent of establishments implement 9 or more practices, but only three per cent of establishments use 15 or 16 practices (Table 5.2).

This contrasts with the distribution of the total use of the practices in the UK Commission’s measure of being a HPW establishment. The number of establishments using between two and five practices, 40 per cent is quite close to the percentage for the more broadly defined HPW measure, but only 19 per cent of establishments use between nine and 14 of the practices in the UK Commission measure.

Table 5.2: Distribution of the number of practices across establishments

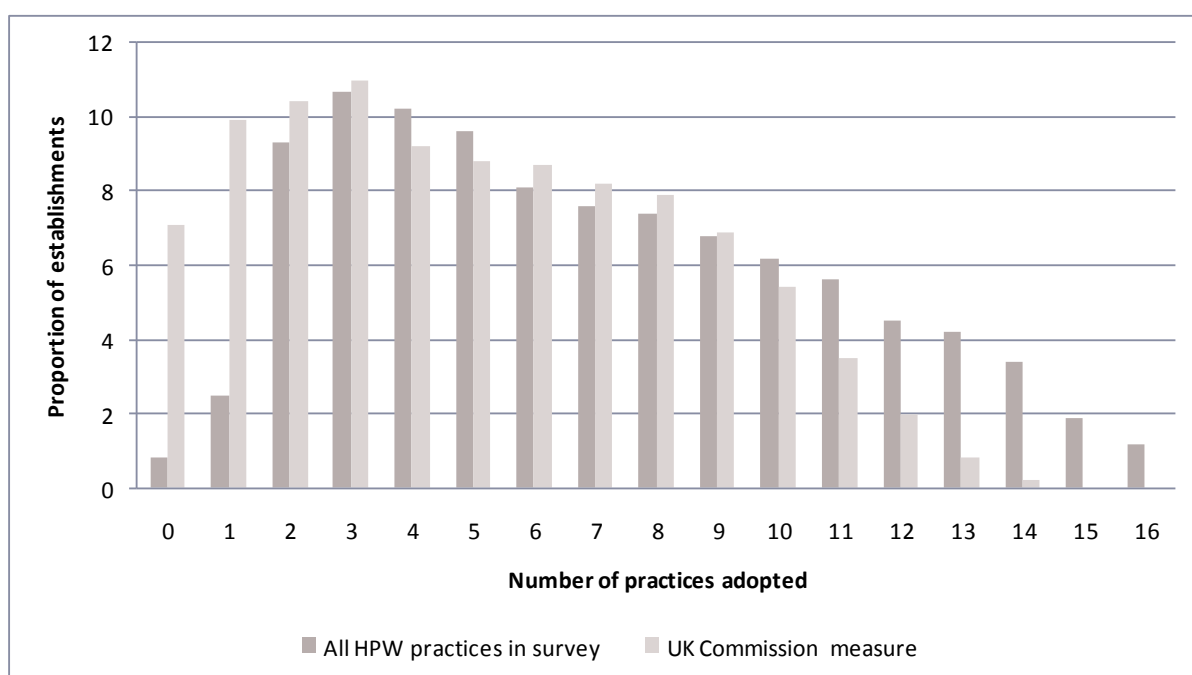


Table 5.3 identifies the cumulative use of HPW practices by establishment. There is no point at which the adoption of additional practices clearly tails off; rather, this is more gradual. This may suggest that there is not a clear cut-off point at which a definition of HPW organisation should be set based on the proportions of establishments adopting practices.

Table 5.3: Cumulative uptake of practices across establishments (% of establishments adopting at least X practices)

Number of practices	Proportion of establishments - all HPW practices in survey	Proportion of establishments – practices in UK Commission measure
0	0.8	7.1
1	3.3	17
2	12.6	27.4
3	23.3	38.4
4	33.5	47.6
5	43.1	56.4
6	51.2	65.1
7	58.8	73.3
8	66.2	81.2
9	73	88.1
10	79.2	93.5
11	84.8	97
12	89.3	99
13	93.5	99.8
14	96.9	100
15	98.8	
16	100	

5.3 Summary

There has been a decline in the use of almost all the practices between 2007 and 2011 in the UK. Work shadowing, annual performance review, evaluation of training and individual performance-related pay experienced the greatest absolute decreases. However, the proportion of establishments with a business plan increased slightly between 2007 and 2011.

The change in use of HPW practices varied by establishment size. In large establishments (250 or more employees), the proportion using project teams, training, annual performance review, employee consultation, flexible benefits, ISO9000 and with a business plan increased. The greatest decline in the proportion of establishments using individual HPW practices was for the smallest establishments (those employing between two and four individuals).

Analysis was also undertaken on the predictors of being a HPW organisation (having at least nine of the 14 practices) in 2007 and 2011. Predictors in both years included sector and size of establishment, as well as being part of a larger organisation. There are two differences between the two years. Establishments in the primary sector were less likely than those in other sectors to be HPW organisations in 2007, but not in 2011. However, establishments in the construction sector were less likely than those in other sectors to be HPW organisations in 2011, but not in 2007.

6 Conclusions

This chapter summarises the level of uptake of HPW practices across the UK; the pattern of HPW practices uptake by sector, size, occupation and geography; the relationships amongst HPW practices and between them and other variables asked about in the survey; the best predictors of the likelihood of a business being a HPW organisation; and the change of uptake of HPW practices from 2007 to 2011. It then considers potential changes to the UK Commission's Employer Skills Survey questionnaire.

The level of uptake of HPW practices across the UK

The use of HPW practices in 2011 in the UK varies by practice. The most commonly used practices are discretion (87 per cent) and variety (87 per cent), with team briefings (79 per cent) and access to flexible working (78 per cent) close behind. The least commonly used practice is creating project teams (nine per cent), although 57 per cent of establishments use problem-solving teams. Three fifths (62 per cent) of establishments have a business plan, 16 per cent Investors in People accreditation and 12 per cent ISO9000 accreditation.

The pattern of HPW practices uptake by sector, size, occupation and geography

The percentage of establishments using all types of HPW practices strongly reflects the size of the establishment, with practices more likely to be adopted in larger establishments. The sectors with the highest proportions of establishments adopting at least nine of the 14 practices included in the UK Commission definition of HPW are mining and quarrying; financial services; public administration and education. Public administration, education, and health and social work establishments report the highest use of individual HPW practices.

There is variation in the uptake of HPW practices by country. Overall, establishments in Scotland use training-related practices most consistently. Use of motivational HPW practices varies across countries. Uptake rates for task discretion and task variety are quite similar between English regions. Higher uptakes are reported for the North for six out of eight skills acquisition practices, but the use of motivational supports is more diverse across regions.

Establishments in which the largest occupational group comprises professionals, associate professionals, or caring, leisure and other service occupations make the greatest use of all the involvement practices.

Three of the eight employee involvement practices (task discretion, task variety and problem solving teams) are more likely to be adopted by establishments with higher levels of customisation. For all skill acquisition and motivational practices establishments adopt a similar percentage of practices irrespective of their level of customisation. Establishments competing in markets with high or premium quality products or services are more likely to adopt HPW practices than establishments that produce standard or basic quality products or services.

The relationships amongst HPW practices and between them and other variables asked about in the 2011 Employer Skills Survey

There are significant relationships between the use of most HPW practices but some are relatively weak. The use of factor analysis confirms that a single common factor does not underlie all the practices. The analysis shows that there are three groupings of practices, which differ from those suggested by the literature (Employee involvement, Skills acquisition, and Motivational practices).

- role involvement, including task discretion and variety;
- organisational involvement;
- skills and knowledge acquisition practices.

Establishments that lead the way in terms of developing new products, services or techniques are more likely to adopt HPW practices. Establishments that compete in markets with high or premium quality products or services are more likely to adopt all HPW practices than establishments that produce standard or basic quality products or services.

The relationship between HPW and recruitment and retention problems (the number of hard-to-fill vacancies as a percentage of total employment and whether the establishment has difficulty retaining staff) is mixed. The skills acquisition practices are significantly positively related to both variables. Motivational practices are not strongly associated with recruitment and retention, but there is a positive relationship between individual performance-related pay and difficulty retaining staff.

Training is measured by the average of the numbers of days training employees receive at an establishment and the percentage of establishment staff trained. Skill acquisition practices are positively related to both variables.

Skills deficiencies are measured by whether the establishment has skills gaps and skills shortage vacancies. Role involvement practices are positively related to skills gaps, and skill acquisition practices are positively related to both skills gap and skills shortage vacancies. These findings may reflect organisations with skill-related challenges having adopted HPW practices, but the direction of causality is unclear.

The best predictors of the likelihood of an establishment being a HPW organisation

Prevalent concepts of high performance working rest on the notion that performance is affected by work organisation, involvement, abilities and motivation. The analysis in this report identifies three dimensions of high performance work systems: role involvement, organisational involvement and skills acquisition.

There are broad similarities between the predictors of these three dimensions, with sector, size, strategy, being part of a larger organisation being significantly related to all three. All are also positively related to employee voice mechanisms. However, there is variation across the three dimensions by sectors and size range. The differences in the predictors between the private and public sectors are not especially marked, but public service workplaces tend to have higher levels of all dimensions of HPW.

There are significant relationships between the use of some of the practices in the UK Commission's time-series definition of HPW organisations. Providing training, having a training plan, a training budget, evaluating training, having a business plan, employee consultation and performing annual reviews are practices that are highly correlated with each other. This suggests that they are usually interconnected and implemented together.

For the UK Commission's time-series definition of being a HPW establishment, predictors include size (with smaller workplaces less likely to be HPW) and being part of a larger organisation (more likely). All else being equal, establishments in the manufacturing and construction groups are significantly less likely to be practising HPW, and those in the public sector are significantly more likely than those in private services. Region is not a predictor. Customised production is positively related to the probability of being a HPW establishment when considering the whole economy and the public sector.

The change of uptake of HPW practices from 2007 to 2011

There has been a decline in the use of almost all the practices between 2007 and 2011 in the UK. Work shadowing, annual performance review, evaluation of training and individual performance-related pay experienced the greatest absolute decreases. However, the proportion of establishments with a business plan increased by 0.3 percentage points between 2007 and 2011.

The change in use of HPW practices varied by establishment size. In large establishments (250 or more employees), the proportion using project teams, training, annual performance review, employee consultation, flexible benefits, ISO9000 and with a business plan increased. The greatest decline in the proportion of establishments using individual HPW practices was for the smallest establishments (those employing between 2 and 4 individuals).

Analysis was also undertaken on the predictors of being a HPW organisation (having at least nine of the 14 practices) in 2007 and 2011. Predictors in both years included sector and size of establishment, as well as being part of a larger organisation. There are two differences between the two years. Establishments in the primary sector were less likely than those in other sectors to be HPW organisations in 2007, but not in 2011. However, establishments in the construction sector were less likely than those in other sectors to be HPW organisations in 2011, but not in 2007.

The comparison between the use of HPW practices in 2007 and 2011 shows a decline for all practices. Nevertheless the drop in the use of these practices is more severe for work shadowing, annual performance review, evaluation of training and individual performance-related pay, with this being especially large in manufacturing, electricity, gas and water supply and construction. Moreover this change in practices is more pronounced for very small establishments employing less than five individuals. This highlights the importance of considering freestanding small- and medium- sized organisations separately from other establishments.

Issues for consideration

There are limited studies of both the relationship between practices or the predictors of high performance working. However, the results of this study are broadly similar to those so far. The assessment of the relationship between practices and dimensionality of high performance working are in line with work on the Workplace Employee Relations Surveys (WERS) of both 1998 and 2004 (de Menezes and Wood, 2006; Wood and de Menezes, 2008).

The UK Commission's time-series measure of HPW does not include many indicators related to employee involvement, and so under-uses the indicators in the 2011 survey to some extent. In addition, several questions were only asked of establishments with over nine employees (problem solving groups and teams), and others of those with over nine employees or part of a larger organisation (annual staff surveys, team meeting and suggestion schemes). This may have intensified the relationships found between size and HPW variables, though the variation in the size bands that are significantly related to these suggest that this may not be that significant.

The primary recommendation would be that all the practices included in our three measures are asked in future surveys. The additional coverage of high performance practices in 2011 has paid dividends and now the survey series has a good range of these. Measures of teamwork, functional flexibility and quality circles might be included; so also might measures of motivational supports that are perhaps more specific to supporting involvement or skills acquisition. For example, job security guarantees have the potential to support idea-capturing schemes and group pay systems to support team work.

Graded scales might add information. For example, the percentage of people who are involved in project teams might be used. This would allow replication of the study reported here as a binary variable could be constructed from these, while allowing for more refined descriptions and analysis if this is deemed to add value. Adding some performance variables to the survey might also be beneficial since this would allow the impact of high performance work systems to be tested.

Future survey design could also consider asking a question relating to adherence to ISO14000 which focuses on waste and cost reduction through environmental commitments. This would complement the question on ISO9000. ISO14000 is concerned with an organisation's impact on the environment which is increasingly being considered as an organisation's performance indicator.

Finally, given the inability to ascertain whether the observed decline in practice use is within workplaces or reflects the changing composition of the economy, the addition of a panel element to the survey might be desirable.

The implications for policy are twofold. First, that programmes to stimulate the use of HPW should highlight its various dimensions. Second, the analysis of predictors may imply on the one hand that workplaces that most need this approach are adopting them and thus there is little need for policy intervention. On the other hand, it suggests that policies directed at stimulating particular strategies and lean production could increase the use of HPW practices.

Annex A

This section provides detailed tables of regression, correlation and factor analysis results.

Table A.1: Predictors of Total Use of Practices in 2007 and 2011 and comparison with 2011 Results for HPW scales

Dependent Variable	2007 Index		2011 Index		Role Involvement 2011		Organisational Involvement 2011		Skills Acquisition 2011	
	Beta Coeff.	T value	Beta Coeff.	T value	Beta Coeff	T value	Beta Coeff	T value	Beta Coeff	T value
Northern Ireland	-.014	-0.44	.030	0.90	.002	0.20	.001	0.06	.080	2.48*
Scotland	.005	0.22	-.004	-0.20	.009	0.77	-.010	-0.50	.060	2.25*
Wales	.022	0.70	-.051	-2.62**	-.013	-1.12	-.048	-2.40*	-.001	-0.06
England										
Primary	-.238	-6.08**	-.091	-2.23*	.020	1.24	-.289	-6.67**	-.029	-0.70
Manufacturing	-.060	-2.74**	-.154	-8.96**	-.005	-0.52	-.117	-7.32**	-.201	-9.97**
Construction	-.006	-0.18	-.133	-6.39**	.008	0.90	-.221	-10.46**	-.097	-4.08**
Public Services	.164	4.97**	.009	0.79	.059	8.07**	.127	12.09**	.104	6.89**
Private Services										
Size 1-4	-.370	-15.48**	-.638	-37.79**	.107	6.77**	-.821	-43.90**	-.665	-35.29**
Size 5-9	-.254	-13.83**	-.315	-23.23**	.087	5.61**	-.555	-36.06**	-.271	-19.37**
Size 10-24	-.104	-7.26**	-.129	-10.28**	.047	3.09**	-.032	-2.17*	-.113	-9.04**
Size 25-49	-.042	-3.09**	-.061	-4.96**	.020	1.32	-.013	-0.87	-.017	-1.43
Size 50-99	-.041	-3.61**	-.044	-3.49**	-.011	-0.66	-.005	-0.35	.010	0.83
Size 100-249	-.010	-0.90	-.020	-1.58	-.011	-0.63	.010	0.65	.007	0.60
Size >=250										
Formal voice mechanism	.307	13.73**	.358	27.04**	.051	8.43**	.421	34.83**	.351	23.76**
Part of a larger organisation	.216	9.58**	.285	23.80**	-.007	-1.08	.634	56.01**	.219	16.18**
Total quality management	.122	7.16**	.149	12.68**	.006	0.83	.136	12.84**	.125	9.10**
Constant	1.596	59.54**	1.456	77.79**	.439	26.64**	.794	39.54**	1.249	62.09**

* = $p < .05$

** = $p < .01$

Table A.2: Predictors of Investors in People, ISO9000 and Business Plan in 2007 and 2011

Independent Variable	Investor in People 2007		Investor in People 2011		ISO9000 2007		ISO9000 2011		Business plan 2007		Business plan 2011	
	Beta Coeff.	T value	Beta Coeff.	T value	Beta Coeff.	T value	Beta Coeff.	T value	Beta Coeff.	T value	Beta Coeff.	T value
Northern Ireland	-.016	-0.07	.022	0.13	.119	0.62	-.084	-0.79	.002	0.01	-.076	-0.64
Scotland	-.130	-0.74	-.218	-1.96*	-.274	-1.44	-.001	-0.01	.359	2.07**	-.104	-0.95
Wales	.327	1.34	-.002	-0.03	.253	0.84	.029	0.29	.111	0.47	-.153	-1.85
England												
Primary	-.377	-1.43	.066	0.35	-.449	-1.59	.352	2.47*	-.792	-4.83**	-.207	-1.76**
Manufacturing	-.280	-1.55	-.543	-5.61**	1.213	7.36**	1.158	15.28**	-.300	-2.17**	-.319	-4.40**
Construction	.128	0.58	-.220	-2.15*	.741	3.13**	.433	4.84**	-.598	-3.20**	-.684	-10.18**
Public Services	1.900	9.15**	.710	9.85**	.336	1.22	-.539	-6.04**	1.144	3.29**	.140	1.15
Private Services												
Size 1-4	-.968	-5.26**	-.883	-7.38**	-1.34	-6.65**	-1.621	-13.15**	-1.457	-7.35**	-2.188	-9.66**
Size 5-9	-.794	-5.37**	-.675	-6.07**	-1.183	-6.44**	-1.205	-10.87**	-1.269	-6.71**	-2.021	-9.00**
Size 10-24	-.523	-4.02**	-.447	-4.12**	-.806	-5.54**	-.972	-9.03**	-.938	-5.18**	-1.611	-7.20**
Size 25-49	-.342	-2.69**	-.284	-2.58**	-.431	-3.17**	-.788	-7.21**	-.423	-2.27**	-1.126	-4.99**
Size 50-99	-.212	-1.84	-.116	-1.02	-.528	-4.67**	-.377	-3.35**	-.374	-2.06*	-.888	-3.84**
Size 100-249	-.236	-1.89	-.053	-0.45	-.151	-1.22	-.395	-3.35**	-.178	-0.92	-.527	-2.14*
Size >=250												
Formal voice mechanism	.821	5.87**	1.078	17.00**	.534	3.48**	.767	12.12**	1.01	8.61**	.936	18.92**
Part of a larger organisation	1.056	7.26**	1.24	21.38**	.662	4.19**	1.036	16.41**	.865	6.81**	.756	13.97**
Constant	-1.847	-8.23**	-2.157	-16.58**	-1.611	-6.70**	-1.635	-12.87**	1.02	4.95**	2.033	8.91**

* = $p < .05$ ** = $p < .01$

Table A.3: Correlation matrix for the Employee Involvement practices

	Task discretion	Task variety	Problem solving teams	Formal job descriptions	Project teams	Team briefings	Suggestion scheme	Staff Survey
Task discretion	1.0000							
Task variety	0.4973	1.0000						
Problem solving teams	-0.0126	0.1212	1.0000					
Formal job descriptions	-0.0167	0.1362	0.4931	1.0000				
Project teams	0.0208	0.1670	0.8015	0.4758	1.0000			
Team briefings	-0.0320	0.1119	0.5455	0.5325	0.4973	1.0000		
Suggestion scheme	-0.0726	0.0998	0.7712	0.6258	0.7262	0.8004	1.0000	
Staff Survey	-0.0295	0.1246	0.5323	0.5431	0.5235	0.7429	0.7887	1.0000

Table A.4: Correlation matrix for the Skills and Involvement practices

	Induction	Work shadowing	Off-the-job training	On-the-job training	Training Plan	Training Budget	Annual performance review	Evaluation of training
Induction	1.0000							
Work shadowing	0.6158	1.0000						
Off-the-job training	0.6050	0.4300	1.0000					
On-the-job training	0.7874	0.5660	0.5579	1.0000				
Training Plan	0.5484	0.5280	0.4700	0.5629	1.0000			
Training Budget	0.5079	0.4656	0.5302	0.5413	0.6341	1.0000		
Annual performance review	0.5499	0.5764	0.4486	0.5489	0.6144	0.6096	1.0000	
Evaluation of training	0.6566	0.5704	0.6032	0.7478	0.6127	0.5121	0.5839	1.0000

Table A.5: Correlation matrix for the Motivational practices

	Org. performance-related pay	Individual performance-related pay	Formal employee consultation procedures	Formal discipline and dismissal procedures	Flexible benefits	Flexible working	Equal opportunity policy
Org. performance-related pay	1.0000						
Individual performance-related pay	0.5291	1.0000					
Formal employee consultation procedures	0.1814	0.1911	1.0000				
Formal discipline and dismissal procedures	0.2712	0.2988	0.6172	1.0000			
Flexible benefits	0.4252	0.4026	0.3289	0.4230	1.0000		
Flexible working	0.0440	0.0140	0.0111	-0.1124	0.0938	1.0000	
Equal opportunity policy	0.2298	0.2194	0.5294	0.5931	0.3615	0.0135	1.0000

Table A.6: Correlation matrix for the UKC14 practices

	Project teams	Work shadowing	Training provided	Training plan	Training budget	Annual performance review	Evaluation of training	Organisational performance-related pay	Individual performance-related pay	Employee consultation	Flexible benefits	Investors in People	ISO9000	Business plan
Project teams	1.0000													
Work shadowing	0.4811	1.0000												
Training provided	0.4734	0.5513	1.0000											
Training plan	0.4411	0.5280	0.5837	1.0000										
Training budget	0.4589	0.4653	0.5962	0.6337	1.0000									
Annual performance review	0.4972	0.5764	0.5546	0.6145	0.6093	1.0000								
Evaluation of training	0.4201	0.5657	0.9700	0.6075	0.5113	0.5790	1.0000							
Organisational performance-related pay	0.1711	0.2710	0.2429	0.2204	0.1838	0.3815	0.2236	1.0000						
Individual performance-related pay	0.2108	0.3244	0.2744	0.2649	0.2409	0.4066	0.2617	0.5291	1.0000					
Employee consultation	0.4043	0.4017	0.3639	0.4677	0.4241	0.5169	0.4335	0.1814	0.1911	1.0000				
Flexible benefits	0.3560	0.3661	0.3620	0.3894	0.3710	0.4754	0.3109	0.4252	0.4026	0.3288	1.0000			
Investors in People	0.3729	0.3317	0.2933	0.4956	0.3983	0.4977	0.4133	0.1360	0.1641	0.4474	0.3218	1.0000		
ISO9000	0.2592	0.1843	0.2500	0.3056	0.2492	0.3008	0.2391	0.2464	0.1755	0.2834	0.2536	0.3546	1.0000	
Business plan	0.4579	0.4453	0.4401	0.5387	0.5741	0.6226	0.4903	0.3309	0.3035	0.4519	0.4173	0.3184	0.4696	1.0000

Table A.7: Factor analysis of the UKC14 practices

	Factor 1	Factor 2	Factor 3
Organisational performance-related pay	0.1253	0.7868	0.0858
Individual performance-related pay	0.2447	0.6408	-0.0046
Flexible benefits	0.3721	0.4657	0.2177
Training provided	0.7373	0.1265	0.2481
Training plan	0.6959	0.1162	0.2074
Training budget	0.7208	0.3455	0.2395
Annual performance review	0.7092	0.2334	-0.0395
Work shadowing	0.7238	0.1342	0.1030
Evaluation of training	0.4685	0.0614	0.5318
Investors in People	0.2122	0.2044	0.4366
ISO9000	0.5702	0.1323	0.2072
Project teams	0.5986	0.2691	0.3401
Business plan	0.5285	0.1115	0.3413
Employee consultation	0.1253	0.7868	0.0858
Variance	4.01579	1.61569	0.97737

Note: The numbers in bold represent those which are higher than 0.5.

Table A.8: Predictors of HPW Subsystems (whole economy)

Independent Variable	Role Involvement		Organisational Involvement			Skills Acquisition	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	
Northern Ireland	.008	0.66	.002	0.10	.087	2.63	**
Scotland	.009	0.79	-.010	-0.50	.060	2.26	*
Wales	-.011	-0.93	-.048	-2.38	.001	0.07	
England							
Primary	.029	1.80	-.287	-6.65	-.018	-0.44	
Manufacturing	-.012	-1.32	-.119	-7.43	-.213	-10.59	**
Construction	.006	0.67	-.222	-10.49	-.102	-4.28	**
Public Services	.065	8.74	.128	12.14	.114	7.51	**
Private Services							
Size 1-4	.106	6.70	-.821	-43.86	-.666	-35.09	**
Size 5-9	.088	5.66	-.555	-36.00	-.270	-18.96	**
Size 10-24	.048	3.14	-.032	-2.15	-.112	-8.74	**
Size 25-49	.022	1.39	-.012	-0.85	-.015	-1.25	
Size 50-99	-.011	-0.68	-.005	-0.35	.009	0.77	
Size 100-249	-.012	-0.67	.010	0.63	.006	0.48	
Size >=250							
Formal voice mechanisms	.052	8.51	.421	34.84	.352	23.77	**
Part of a larger organisation	-.002	-0.39	.635	56.10	.225	16.69	**
Customised production	.032	9.73	.008	1.60	.051	7.27	**
Total quality management	.002	0.36	.135	12.70	.119	8.62	**
Constant	.372	20.76	.778	35.09	1.146	48.12	**

* = $p < .05$, ** = $p < .01$

Table A.9: Predictors of HPW subsystems (by Private and Public sector)

Dependent Variable	PRIVATE						PUBLIC					
	Role Involvement		Organisational Involvement		Skills Acquisition		Role Involvement		Organisational Involvement		Skills Acquisition	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	.0050	0.42	-.006	-0.29	.078	2.35*	.002	0.21	.003	0.14	.081	2.50*
Scotland	.0116	0.94	-.007	-0.36	.063	2.36*	.009	0.79	-.009	-0.43	.060	2.27*
Wales	-.011	-0.94	-.048	-2.40*	.001	0.03	-.013	-1.10	-.046	-2.31*	-.000	-0.01
England												
Primary	.017	1.08	-.281	-6.38**	-.029	-0.69	.019	1.20	-.292	-6.76	-.031	-0.75
Manufacturing	-.010	-1.04	-.094	-5.73**	-.193	-9.44**	-.005	-0.57	-.121	-7.55	-.203	-10.09**
Construction	.004	0.54	-.201	-9.45**	-.091	-3.80**	.007	0.87	-.223	-10.58	-.098	-4.15**
Public Services												
Private Services												
Size 1-4	.093	5.88**	-.842	-46.10**	-.683	-36.77**	.106	6.72**	-.827	-44.10**	-.669	-35.56**
Size 5-9	.074	4.77**	-.566	-37.62**	-.285	-20.71**	.086	5.58**	-.559	-36.28**	-.274	-19.67**
Size 10-24	.036	2.37*	-.048	-2.90**	-.125	-10.16**	.047	3.06**	-.036	-2.45*	-.116	-9.30**
Size 25-49	.016	1.02	-.016	-1.12	-.022	-1.81	.021	1.35	-.013	-0.92	-.017	-1.44
Size 50-99	-.014	-0.86	-.007	-0.51	.007	0.58	-.010	-0.65	-.006	-0.41	.009	0.80
Size 100-249	-.013	-0.72	.009	0.57	.005	0.43	-.011	-0.63	.009	0.59	.007	0.57
Size >=250												
Formal voice mechanisms	.055	9.05**	.410	34.14**	.349	23.35**	.052	8.48**	.423	35.05**	.352	23.87**
Part of a larger organisation	-.004	-0.70	.617	55.14**	.212	15.77**	-.007	-1.09	.634	55.99**	.219	16.17**
Customised production	.003	1.18	-.059	-13.36**	-.028	-4.91**	.024	8.85**	.046	10.34**	.039	6.29**
Total quality management	.003	0.49	.145	13.74**	.128	9.21**	.006	0.80	.135	12.71**	.124	9.04**
Constant	.447	26.57**	.928	44.25**	1.323	60.57**	.440	26.78**	.801	39.79**	1.253	62.50**

* = $p < .05$, ** = $p < .01$

Table A.10: Predictors of Motivational Supports (whole economy)

Dependent variable Independent variable	Organisation performance-related pay		Individual performance related pay		Formal discipline and dismissal procedures		Flexible benefits		Flexible work		Equal opportunity policies	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.519	-5.07**	-.039	-0.21	.009	0.05	-.168	-1.74	-.144	-1.59	.603	3.33**
Scotland	-.055	-0.52	-.362	-3.36**	-.181	-1.23	-.144	-1.33	-.218	-2.12*	-.070	-0.45
Wales	-.321	-3.96**	-.256	-3.03**	-.180	-1.74	.036	0.39	-.296	-3.56**	-.319	-3.13**
England												
Primary	-.258	-1.94	-.015	-0.09	-.497	-3.43**	-.118	-0.80	.134	1.05	-.718	-5.50**
Manufacturing	.051	0.71	-.145	-1.87	-.221	-2.24**	-.093	-1.14	-.376	-5.50**	-.332	-3.28**
Construction	-.128	-1.68	-.138	-1.70	-.194	-2.49**	-.331	-3.75**	-.175	-2.54*	-.350	-4.32**
Public Services	-2.328	-27.13**	-1.013	-15.57**	.888	3.02**	.003	0.05	-.277	-4.16*	1.069	4.91**
Private Services												
Size 1-4	-1.161	-10.46**	-1.161	-10.56**	-3.426	-5.85**	-1.858	-16.46**	-.236	-1.87	-1.890	-4.27**
Size 5-9	-.703	-6.67**	-.724	-7.07**	-1.966	-3.36**	-1.408	-13.48**	-.621	-5.15**	-1.237	-2.80**
Size 10-24	-.533	-5.16**	-.504	-5.05**	-1.126	-1.92	-1.072	-10.50**	-.666	-5.64**	-.770	-1.75
Size 25-49	-.427	-4.07**	-.380	-3.75**	-.471	-0.79	-.933	-9.02**	-.763	-6.41**	-.378	-0.85
Size 50-99	-.418	-3.84**	-.350	-3.33**	-.332	-0.54	-.758	-7.06**	-.920	-7.54**	-.110	-0.24
Size 100-249	-.180	-1.57	-.247	-2.23**	.241	0.33	-.493	-4.38**	-.590	-4.62**	.272	0.53
Size >=250												
Formal voice mechanisms	.237	4.67**	.502	8.98**	1.657	22.55**	.674	12.76**	.167	3.29**	1.503	18.08**
Part of a larger organisation	.790	15.39**	.513	9.70**	1.244	15.27**	.959	18.64**	-.341	-6.48**	.570	6.62**
Customised production	.191	7.54**	.096	3.53**	-.020	-0.62	.070	2.68**	.149	5.79**	.089	2.61**
Total quality management	.443	7.32**	.318	5.26**	.631	4.87**	.442	7.59**	-.079	-1.39	.542	4.28**
Constant	-.800	-6.51**	-.998	-8.01**	2.967	5.02**	-.712	-5.69**	1.540	11.21**	2.396	5.33**

* = $p < .05$ ** = $p < .01$

Table A.11: Motivational supports (Private Sector)

Independent variable	Organisation performance-related pay		Individual performance-related pay		Formal discipline and dismissal procedures		Flexible benefits		Flexible work		Equal opportunity policies	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.514	-4.94**	-.029	-0.17	-.011	-0.06	-.173	-1.79	-.173	-1.94	.568	3.23**
Scotland	-.103	-0.96	-.389	-3.61**	-.173	-1.17	-.145	-1.34	-.228	-2.21*	-.063	-0.40
Wales	-.354	-4.43**	-.273	-3.23**	-.190	-1.84	.034	0.37	-.313	-3.79**	-.330	-3.25**
England												
Primary	-.297	-2.17*	-.043	-0.27	-.509	-3.59**	-.134	-0.90	.107	0.84	-.769	-5.94**
Manufacturing	.026	0.35	-.191	-2.46*	-.175	-1.78	-.083	-1.01	-.329	-4.78**	-.294	-2.89**
Construction	-.177	-2.27*	-.186	-2.25*	-.165	-2.10*	-.329	-3.70**	-.157	-2.28*	-.337	-4.12**
Size 1-4	-.790	-7.61**	-1.007	-9.22**	-3.492	-5.96**	-1.856	-16.68**	-.169	-1.37	-2.000	-4.52**
Size 5-9	-.381	-3.95**	-.602	-5.97**	-2.024	-3.46**	-1.410	-13.67**	-.566	-4.80**	-1.345	-3.05**
Size 10-24	-.241	-2.56*	-.395	-4.03**	-1.174	-2.00*	-1.074	-10.63**	-.619	-5.36**	-.863	-1.96
Size 25-49	-.259	-2.71**	-.332	-3.33**	-.484	-0.82	-.935	-9.08**	-.745	-6.36**	-.421	-0.94
Size 50-99	-.274	-2.75**	-.313	-3.02**	-.333	-0.54	-.756	-7.07**	-.901	-7.49**	-.135	-0.29
Size 100-249	-.080	-0.77	-.217	-1.99*	.222	0.31	-.490	-4.37**	-.574	-4.56**	.251	0.49
Size >=250												
Formal voice mechanisms	.262	5.08**	.533	9.49**	1.650	22.43**	.676	12.81**	.153	3.04**	1.504	18.12**
Part of a larger organisation	.868	16.67**	.578	11.01**	1.189	14.50**	.953	18.82**	-.358	-6.82**	.531	6.15**
Customised production	.364	17.75**	.258	12.36**	-.181	-6.18**	.012	0.60	.021	0.98	-.096	-3.26
Total quality management	.438	7.23**	.307	5.06**	.653	5.07**	.448	7.69**	-.054	-0.96	.556	4.38**
Constant	-1.541	-13.67**	-1.493	-12.58**	3.366	5.71**	-.597	-5.07**	1.723	13.20**	2.891	6.47**

* = $p < .05$

** = $p < .01$

Table A.12: Motivational supports (Public Sector)

Independent variable	Organisation performance-related pay		Individual performance related pay		Formal discipline and dismissal procedures		Flexible benefits		Flexible work		Equal opportunity policies	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.542	-5.35**	-.057	-0.31	.015	0.09	-.175	-1.81	-.170	-1.90	.581	3.25**
Scotland	-.062	-0.58	-.365	-3.39**	-.178	-1.20	-.143	-1.33	-.221	-2.15*	-.066	-0.42
Wales	-.335	-4.19**	-.266	-3.16**	-.176	-1.71	.035	0.38	-.309	-3.72**	-.325	-3.19**
England												
Primary	-.280	-2.10*	-.024	-0.14	-.494	-3.40**	-.132	-0.89	.101	0.79	-.751	-5.78**
Manufacturing	.110	1.54	-.111	-1.45	-.228	-2.33*	-.078	-0.96	-.332	-4.90**	-.315	-3.13**
Construction	-.103	-1.37	-.123	-1.51	-.198	-2.53*	-.325	-3.69**	-.158	-2.31*	-.349	-4.31**
Size 1-4	-1.099	-9.97**	-1.135	-10.31**	-3.447	-5.89**	-1.861	-16.61**	-.214	-1.71	-1.917	-4.33**
Size 5-9	-.658	-6.30**	-.707	-6.89**	-1.984	-3.39**	-1.414	-13.61**	-.607	-5.09**	-1.267	-2.87**
Size 10-24	-.490	-4.79**	-.489	-4.88**	-1.14	-1.95	-1.077	-10.60**	-.654	-5.59**	-.796	-1.80
Size 25-49	-.408	-3.93**	-.380	-3.74**	-.471	-0.80	-.936	-9.08**	-.762	-6.46**	-.388	-0.87
Size 50-99	-.393	-3.65**	-.346	-3.27**	-.332	-0.54	-.757	-7.07**	-.913	-7.54**	-.115	-0.25
Size 100-249	-.156	-1.38	-.240	-2.16*	.238	0.33	-.491	-4.38**	-.581	-4.59**	.268	0.53
Size >=250												
Formal voice mechanisms	.224	4.42**	.495	8.87**	1.660	22.59**	.674	12.77**	.159	3.14**	1.504	18.10**
Part of a larger organisation	.755	14.72**	.500	9.45**	1.248	15.33**	.950	18.50**	-.361	-6.86**	.556	6.50**
Customised production	-1.050	-18.70**	-.429	-15.05**	.330	2.51*	-.017	-0.54	-.099	-3.49**	.377	3.53**
Total quality management	.468	7.84**	.334	5.57**	.628	4.86**	.449	7.76**	-.056	-1.00	.546	4.32**
Constant	-.467	-4.09**	-.829	-7.21**	2.949	5.03**	-.566	-4.90**	1.811	14.15**	2.606	5.86**

* = $p < .05$

** = $p < .01$

Table A.13: Motivational Supports with inclusion of strategy variables (Private Sector)

Independent variable	Organisation performance-related pay		Individual performance related pay		Formal discipline and dismissal procedures		Flexible benefits		Flexible work		Equal opportunity policies	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.517	-4.81**	.047	0.23	-.079	-0.40	-.222	-1.86	-.148	-1.41	.674	3.45**
Scotland	-.062	-0.53	-.370	-3.13**	-.226	-1.42	-.116	-0.92	-.139	-1.17	-.098	-0.61
Wales	-.330	-3.86**	-.328	-3.53**	-.183	-1.66	.078	0.72	-.313	-3.36**	-.365	-3.46**
England												
Primary	-.398	-2.88**	-.104	-0.62	-.502	-3.50**	-.091	-0.59	.131	1.01	-.735	-5.70**
Manufacturing	-.042	-0.57	-.220	-2.82**	-.127	-1.28	-.065	-0.78	-.314	-4.53**	-.256	-2.53*
Construction	-.207	-2.66**	-.203	-2.42*	-.094	-1.18	-.269	-2.95**	-.125	-1.75	-.298	-3.62**
Size 1-4	-1.190	-8.21**	-1.020	-7.29**	-3.771	-5.96**	-1.815	-12.73**	.058	0.39	-1.974	-4.03**
Size 5-9	-.800	-5.76**	-.643	-4.89**	-2.302	-3.64**	-1.343	-10.08**	-.372	-2.64**	-1.310	-2.68**
Size 10-24	-.646	-4.73**	-.454	-3.52**	-1.434	-2.26*	-1.032	-7.89**	-.432	-3.13**	-.851	-1.74
Size 25-49	-.513	-3.70**	-.361	-2.77**	-.722	-1.13	-.835	-6.28**	-.419	-3.00**	-.504	-1.02
Size 50-99	-.517	-3.63**	-.343	-2.55*	-.463	-0.69	-.664	-4.84**	-.532	-3.71**	-.130	-0.26
Size 100-249	-.203	-1.35	-.220	-1.56	-.248	-0.32	-.482	-3.34**	-.357	-2.37*	.120	0.21
Size >=250												
Formal voice mechanisms	.340	6.39**	.558	9.41**	1.692	21.60**	.663	11.37**	.167	3.07**	1.411	16.51**
Part of a larger organisation	.869	15.72**	.576	10.01**	1.238	13.74**	.917	15.79**	-.388	-6.51**	.496	5.42**
Customised production	.096	3.51**	.072	2.41*	-.065	-1.78	.017	0.56	.021	0.70	.017	0.47
Non-price competition	-.008	-0.47	-.040	-1.96	-.027	-1.12	.001	0.02	.010	0.51	.001	0.06
Product leadership	.112	6.19**	.098	4.71**	.050	2.19*	.095	4.67**	.051	2.48*	-.016	-0.68
Competing on Quality	.004	0.21	.014	0.57	-.001	-0.06	.039	1.58	.023	1.00	.023	0.83
Total quality management	.391	6.01**	.255	3.88**	.628	4.68**	.427	6.73**	-.190	-3.09**	.637	5.09**
Constant	-.847	-4.73**	-1.254	-6.93**	3.256	5.03**	-1.1321	-6.15**	1.218	6.45**	2.537	4.99**

* = $p < .05$ ** = $p < .01$

Table A.14: Predictors of HPW Subsystems including Investors in people and business plan as explanatory variables (whole economy)

Dependent Variable	Role Involvement			Organisational Involvement			Skills Acquisition	
	Beta Coeff.	t-value		Beta Coeff.	t-value		Beta Coeff.	t-value
Independent Variable								
Northern Ireland	.008	0.70		.011	0.54		.092	3.01 **
Scotland	.010	0.88		.001	0.05		.072	2.87 **
Wales	-.009	-0.79		-.046	-2.40	*	.008	0.40
England								
Primary	.032	1.93		-.269	-6.56	**	.001	0.03
Manufacturing	-.007	-0.81		-.076	-4.80	**	-.166	-8.29 **
Construction	.015	1.65		-.160	-7.70	**	-.033	-1.41
Public Services	.064	8.45 **		.103	9.78 **		.083	5.80 **
Private Services								
Size 1-4	.116	7.29 **		-.752	-43.59 **		-.588	-32.97 **
Size 5-9	.096	6.13 **		-.502	-35.26 **		-.208	-15.72 **
Size 10-24	.052	3.39 **		-.005	-0.43		-.080	-6.77 **
Size 25-49	.022	1.43		-.005	-0.39		-.005	-0.47
Size 50-99	-.011	-0.66		-.002	-0.16		.014	1.27
Size 100-249	-.012	-0.69		.009	0.61		.004	0.39
Size >=250								
Formal voice mechanisms	.041	6.69 **		.338	28.70 **		.263	18.03 **
Part of a larger organisation	-.010	-1.51		.565	50.64 **		.150	11.21 **
Customised production	.031	9.37 **		.002	0.55		.044	6.56 **
Total quality management	-.003	-0.43		.084	8.36 **		.061	4.52 **
Investors in People	-.001	-0.21		.119	12.41 **		.129	9.43 **
Business Plan	.057	7.82 **		.393	24.93 **		.422	23.85 **
Constant	.338	18.09 **		.510	22.12 **		.856	34.47 **

* = $p < .05$

** = $p < .01$

Table A.15: Motivational Support including Investors in people and business plan as explanatory variables (whole economy)

Dependent variable Independent variable	Organisation performance-related pay		Individual performance related pay		Formal discipline and dismissal procedures		Flexible benefits		Flexible work		Equal opportunity policies	
	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value	Beta Coeff.	t-value
Northern Ireland	-.518	-4.95**	-.034	-0.19	.007	0.04	-.158	-1.62	-.139	-1.56	.614	3.46**
Scotland	-.044	-0.42	-.349	-3.22**	-.170	-1.15	-.122	-1.11	-.208	-1.99*	-.054	-0.34
Wales	-.310	-3.76**	-.247	-2.89**	-.144	-1.34	.042	0.45	-.289	-3.46**	-.286	-2.71**
England												
Primary	-.230	-1.73	.015	0.09	-.482	-3.27**	-.090	-0.60	.149	1.16	-.704	-5.30**
Manufacturing	.110	1.50	-.073	-0.95	-.146	-1.47	-.007	-0.10	-.339	-4.90**	-.259	-2.53*
Construction	-.022	-0.29	-.030	-0.37	-.078	-0.99	-.222	-2.46**	-.123	-1.76	-.241	-2.90**
Public Services	-2.345	27.29**	-1.064	-16.25**	.834	2.78**	-.060	-0.73	-.312	-4.62**	.995	4.70**
Private Services												
Size 1-4	-1.057	-9.52**	-1.045	-9.53**	-3.173	-5.41**	-1.718	-15.22**	-.162	-1.27	-1.634	-3.68**
Size 5-9	-.612	-5.82**	-.625	-6.14**	-1.711	-2.92**	-1.287	-12.33**	-.562	-4.62**	-1.002	-2.26*
Size 10-24	-.484	-4.71**	-.450	-4.55**	-.924	-1.57	-.998	-9.81**	-.634	-5.34**	-.599	-1.36
Size 25-49	-.410	-3.94**	-.361	-3.59**	-.346	-0.58	-.897	-8.73**	-.754	-6.31**	-.283	-0.63
Size 50-99	-.406	-3.74**	-.338	-3.25**	-.235	-0.38	-.734	-6.88**	-.918	-7.49**	-.036	-0.08
Size 100-249	-.179	-1.57	-.246	-2.24*	.290	0.40	-.485	-4.36**	-.592	-4.62**	.316	0.62
Size >=250												
Formal voice mechanisms	.115	2.24*	.369	6.50**	1.520	20.44**	.523	9.70**	.090	1.75	1.3449	16.02**
Part of a larger organisation	.705	13.08**	.400	7.21**	1.139	13.63**	.832	15.73**	-.409	-7.55**	.436	4.95**
Customised production	.179	6.97**	.084	3.09**	-.037	-1.11	.060	2.27*	.144	5.59**	.076	2.20*
Total quality management	.374	6.08**	.226	3.68**	.489	3.79**	.331	5.60**	-.137	-2.38*	.387	2.98**
Investors in people	.021	0.35	.190	2.93**	.349	2.68**	.320	5.39**	.156	2.52*	.433	3.18**
Business plan	.667	11.43**	.655	10.48**	.697	11.06**	.661	10.04**	.309	5.60**	.718	10.68**
Constant	-1.230	-9.48**	-1.446	-11.02**	2.402	4.05**	-1.202	-9.09**	1.334	9.37**	1.843	4.07**

* = $p < .05$ ** = $p < .01$

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UKCES
Renaissance House
Adwick Park
Wath-upon-Dearne
Rotherham
S63 5NB
T +44 (0)1709 774 800
F +44 (0)1709 774 801

UKCES
Sanctuary Buildings
Great Smith St.
Westminster
London
SW1P 3BT
T +44 (0)20 7227 7800

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