European Foundation for the Improvement of Living and Working Conditions

Management practices and sustainable organisational performance: an analysis of the European Company Survey 2009

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Executive summary

Introduction

This report is based on secondary data analysis of Eurofound's recent European Company Survey (ECS) 2009. It explores the links between a broad range of workplace practices and sustainable organisational performance, building on the survey report. The report develops a theoretical and analytical framework against which questions from the ECS are mapped and then subjected to a range of multivariate analyses.

The framework used to explain the link between high-performance work practice (HPWP) and organisational performance is based on the ability, motivation and opportunity (AMO) model. It proposes that HPWPs achieve their results by increasing employees' discretionary effort.

Policy context

Sustainable high-performance work practices have been presented as key to sustaining manufacturing jobs in the face of competition from cheaper labour overseas (Appelbaum et al., 2000), improving the quality of work and for raising general economic performance (Belt and Giles, 2009). In the wake of the global economic crisis, it is also increasingly evident that emerging economies can outperform many European countries in their production of low-value-added goods and services, but equally that there is growing demand for upmarket Western exports from emerging economies. To exploit competitive potential, firms therefore need to be prepared to move up the value chain, but to do so is likely to require approaches to people management that provide workers with higher levels of skills and the ability to unlock their discretionary effort. This is reflected in the European Union's 2020 strategy, which aspires to 'smart growth' based on competitive strategies founded on continuous development of knowledge and innovation, and a commitment to improving competitiveness through higher productivity. Improving the quality and quantity of employment through advancing workplace practices relate closely to these aims. They are necessary to expand the proportion of people who have high-quality employment and to contribute to aspirations for a higher-value-added competitive strategy for European organisations.

Key findings

There is consistent evidence across all the results that use of HPWPs are associated with improved performance outcomes for both employees and the workplace.

Practices associated with good employee performance outcomes

Practices associated with reducing employee absence levels are reviews of staff training needs, (extensive) profit-sharing, share-ownership, autonomous teamworking, the presence of flexible working and its take-up by at least a fifth of employees.

Practices with beneficial links to reducing employee motivation problems are reviews of staff training needs; giving staff training for new tasks and time off for training; profit-sharing; the presence of teamworking and autonomous teamworking; and the take-up of flexible working by at least a fifth of employees.

Practices with beneficial links to reducing employee retention problems are autonomous teamworking and formal employee representation.

Practices associated with good organisational performance outcomes

Practices with beneficial links to above-average productivity are all training, performance pay and teamworking practices, and all flexible working practices and ad hoc consultation where there is no formal employee representation.

Practices with beneficial links to improved productivity over the past three years are training, team work and social dialogue practices, all flexible working practices, the presence of profit-sharing and the presence and coverage of individual incentive pay for at least 25% of employees.

Practices with beneficial links to a good work climate are all training practices and all team work practices, and ad hoc consultation where there is no formal employee representation.

Practices with beneficial links to a good economic situation for the firm are all training practices, all pay practices and all teamworking practices as well as ad hoc consultation where there is no formal employee representation.

The results show that HPWPs may achieve their effects on organisational performance through improving employee performance, rather than simply acting directly on operational and organisational outcomes. They provide evidence to emphasise the contribution employees may make to organisational performance and add weight to the case for firms to invest in appropriate HPWPs.

Good employee outcomes are associated with good organisational outcomes. Management and employee representatives making sincere efforts to solve common problems is positively associated with all organisational outcomes, including higher productivity and improved productivity in recent years, a good work climate, a good economic situation and absence of industrial action in the past year. Low motivation, high absenteeism and retention problems are all negatively associated with higher-than-average productivity and improved productivity in recent years, a good work climate and a good economic situation. This is consistent with a lack of worker effort affecting productivity. Low motivation and high absenteeism are also associated with the incidence of industrial action in the last year.

There is some evidence to suggest that most HPWPs and combinations of them have a significant and positive relationship for both the highest-performing and the lowest-performing firms. However, there is a much stronger positive link for individual HPWPs and combinations of HPWPs and performance in poorer-performing firms. This would suggest, if such a link were causal, that poorer-performing firms may stand to gain greater benefits from the application of HPWPs.

Policy pointers

The incidence of employee complaints about lack of career development opportunities and rejected requests for training is higher among firms with higher-skilled staff and those that provided training. This suggests that firms may need support in managing the expectations of staff and in considering how to develop internal labour markets that can meet staff desires for career progression.

Similarly, firms that provide training are more likely to receive complaints about pay. This suggests a need to support firms in integrating pay and training practices and in managing staff expectations about rewards for skills acquisition and deployment.

Firms that provide flexible working hours, have at least 20% of staff making use of flexible working and part-time working, and managerial staff working part time, are more likely to experience higher levels of discontent about career development possibilities. This points to a continuing need to support and encourage organisations to enable them to provide equal opportunities to staff using different modes and forms of working time.

Firms with lower levels of performance may stand to gain greater performance improvements from implementing HPWPs than those with higher levels of performance. Policy support should therefore provide a continued focus on enabling the diffusion of HPWPs across firms where their sectors and business strategies may benefit from these practices.

There is mixed evidence concerning the impact of formal employee representation; however, joint efforts by managers and employees to solve problems and good-quality working relationships are associated with beneficial performance outcomes. This suggests that enabling social partners to work together effectively and supporting firms to realise the benefits of collaboration between social partners is worthy of continued policy attention.

Background to study and methodological approach 1

This report is based on secondary data analysis of the recent Eurofound European Company Survey (ECS) 2009 to explore the links between a broad range of workplace practices and sustainable organisational performance, building on the survey report which provided an overview of findings in relation to a number of key themes. The survey is a large-scale one, covering the 27 EU Member States and EU candidate countries (Turkey, Former Yugoslav Republic of Macedonia and Croatia). It received responses from over 27,000 workplaces, from a sample of organisations that employed at least 10 employees, and achieved response rates of between 11% and 65% for management interviewees. The survey had the benefit of some 'matched' interviews with employee representatives in each country, with at least 30% of employee representatives participating from among those workplaces with employee representation.

The first published report on the survey was primarily descriptive and focused on assessing the incidence of different workplace practices in different countries. This report uses mostly multivariate analysis to assess the presence of links between combinations of workplace practices and organisational and employee outcomes. It also seeks to assess whether there are differing levels of impact on performance depending on the range of practices adopted by organisations and whether there are patterns of impact which relate to Member States with different employment policy regimes. Lastly, it makes recommendations for the development of the ECS in terms of areas of content.

The rest of this chapter gives an overview of the methodological approach taken for the analysis and full details are provided in Chapter 3 alongside the results. Chapter 2 explains the theoretical and analytic framework for the analysis, drawing on the existing literature on HPWPs. Chapter 3 sets out the results of the data analysis and Chapter 4 draws together the conclusions and recommendations.

Overview of methodological approach

The methodology adopted was to review the existing theoretical and empirical literature on high-performance working and to create an analytic framework within which questions from the ECS could be located and from which hypotheses about the connections between workplace practices and performance could be derived. Once the literature review was completed, ECS question responses were grouped into four distinct areas to enable the creation of a model from which appropriate choices could be made about statistical testing. The model drew on four different types of questions from the survey:

- predictor (sometimes called independent) indicator questions relating to the context of the organisation, for example its size;
- predictor (sometimes called independent) indicator questions relating to the workplace practices adopted and reported in the management questionnaire and the employee representative questionnaire;
- outcome (sometimes called dependent) indicator questions relating to employee behaviour in the workplace, for example MM157 in the management questionnaire which identifies absence, motivation and staff retention, measures of the quality of management/employee relations in ER151-05 and ER406 of the employee representative questionnaire and recent industrial action measured in ER260 of the employee representative questionnaire;
- outcome (sometimes called dependent) organisational indicators taken from the section of the management questionnaire on performance and productivity indicators.

The analytic framework is presented and discussed in more detail in Chapter 2. Most of the analysis is undertaken using regression models and their specification is provided alongside the results. Further regression testing is also used to assess the links between the use of HPWPs in high-performing and low-performing firms.

2 Literature review and development of the analytic framework

Introduction

The purpose of this chapter is to set out the theoretical framework by which the ECS will be analysed and to illustrate how the questions from the survey are located within that framework. It begins by giving a brief introduction to the origins of HPWPs, presents the AMO theoretical model on which the analysis is based, then discusses how the main HPWPs of pay, working time, social dialogue and training covered in the survey map onto the model and the existing empirical data on their links with performance. The chapter then introduces existing methods of assessing organisational performance and explains the potential importance of contextual variables in understanding how and why the application and impact of HPWPs may vary between organisations.

Evolution of HPWPs and rationale for policy interest

Contemporary literature on management and work organisation has paid considerable attention to the way that certain human resource practices can improve the performance of individual employees and the organisations employing them. There is a variety of terminology used to describe innovative workplace human resource management (HRM) practices, including 'best practice' HRM, 'high commitment' or 'high involvement' management. The term we adopt here is HPWP (high-performance work practice) because it is evident from previous research that organisations do not necessarily all adopt these practices with an underpinning coherent management approach or philosophy.

There are few precise definitions of what should be considered 'high-performance' and considerable debate over which practices constitute HPWPs, in addition to the question of how combinations of practices fit together and the order in which firms should implement them. In their review of the HPWP literature, Belt and Giles (2009) define high-performance working as 'a general approach to managing organisations that aims to stimulate more effective employee involvement and commitment to achieve high levels of performance'. Typically, HPWPs are presented as an alternative to traditional Taylorist management systems which were based on hierarchical organisations in which managers exercised centralised control over workers, who were given little discretion and treated as passive inputs to the production process. By shifting from a system of management based on notions of 'controlling' workers to one focused instead on eliciting higher levels of 'commitment' (Walton, 1985), HPWPs and the systems that underpin them promised to deliver improved individual and thereby organisational performance. Most lists of HPWPs therefore cover practices in four main areas of HRM:

- practices that structure work organisation and job design – for example use of teams and working time arrangements;
- practices that ensure high quality of labour input into the production process, for example careful recruitment and selection, training and development, appraisal and performance management;
- practices that provide opportunities for employees to contribute to organisational decision-making, for example collective bargaining, direct representation and communication between staff and managers, and individual working groups to improve quality or solve workplace problems;
- practices that provide rewards for performance, for example variable pay, employee benefits and career progression opportunities.

Such practices are theoretically highly attractive to both business leaders and policy-makers. HPWPs have been the subject of 'popular' management literature arguing that firms can gain a competitive edge by adopting certain human resource practices (for example, Pfeffer, 2004). In policy circles, HPWPs have been presented as key to sustaining

manufacturing jobs in the face of competition from cheaper labour overseas (Appelbaum et al., 2000), improving the quality of work and raising general economic performance (Belt and Giles, 2009). In the wake of the global economic crisis, it is also increasingly evident that emerging economies can outperform many European countries in their production of low-value-added goods and services, but equally that there is growing demand for upmarket Western exports from a burgeoning middle class in the BRIC countries. To exploit our competitive potential, firms therefore need to be prepared to move up the value chain, but to do so is likely to require approaches to people management that provide workers with higher levels of skills and the ability to unlock their discretionary effort. This is reflected in the European Union's 2020 strategy, which aspires to 'smart growth' based on competitive strategies founded on continuous development of knowledge and innovation, and a commitment to improving competitiveness through higher productivity. Improving the quality and quantity of employment through advancing workplace practices relate closely to these aims. They are necessary to expand the proportion of people who have high-quality employment and to contribute to aspirations for a higher-value-added competitive strategy for European organisations.

Theoretical foundations – the AMO model

The model used here to explain the link between HPWPs and organisational performance is the ability, motivation and opportunity (AMO) model. This is founded on organisational psychology theory, which is appropriate for seeking to understand performance because it attempts to predict the behaviour of people in a workplace context. It proposes that HPWPs work by increasing the use of employees' discretionary effort. Specifically, HPWPs increase employees' ability to do their job, the motivation to go beyond the terms of their job descriptions and the opportunity to exert discretionary effort. The notion of discretionary effort acknowledges that employees may be able to contribute more to the organisation than simply getting the job done. In the right circumstances and with the right incentives they may be willing to exert additional effort for the firm (Appelbaum et al., 2000) by trying to be more creative, helpful, paying extra attention to detail or taking on additional tasks.

Ability refers to practices that ensure employees are equipped with the skills needed to undertake their jobs, with a presumption that jobs will be relatively highly skilled. Ensuring that employees have appropriate skill levels to make use of the opportunity to use their discretionary effort through participatory work practices is also important. The two main routes through which firms can ensure their employees are suitable are recruitment and selection practices that ensure capable individuals are hired in the first place, and training for workers (Huselid, 1995; Appelbaum et al., 2000).

Secondly, employees need to have the motivation to use discretionary effort. *Motivation* has been categorised into three forms: extrinsic/financial; intrinsic; and mutual trust/employees as stakeholders (Appelbaum et al., 2000). Extrinsic factors include a range of incentive pay schemes, such as employee share-ownership programmes, individual performance pay or commission and group-based performance pay. Intrinsic motivation is linked to the extent to which employees find a job satisfying and enjoyable to do. Finally, firms can encourage motivation by creating an atmosphere of trust and encouraging employees to think of themselves as stakeholders in the firm. The performance benefits of motivated staff are that they are less likely to be absent and less likely to leave their job.

Opportunity refers to involvement in the decision-making process of the firm (Appelbaum et al., 2000). For many writers this is the distinctive feature that marks HPWP out from other HR practices (Appelbaum et al., 2000; Wood and Wall, 2007; Boxall and Macky, 2009). In HPWP, decision-making is supposed to be decentralised and participatory, distinct from the hierarchical 'control' practices of traditional Taylorist systems of management. Wood and Wall (2007) identify a number of ways in which employees might be given an opportunity to participate. Firstly, employees may enjoy a higher level of autonomy over how they do their job – for example by being part of a self-managed team. Secondly, employees might be given greater 'voice' to influence more strategic organisational decisions, either directly or through representatives, although it has been noted that the 'involvement' aspects of HPWP have increasingly received less

emphasis than other aspects in research on the high-performance paradigm (Wood and Wall, 2007; Boxall and Macky, 2009). The performance benefits of providing opportunities for staff involvement are that decision-making may be improved through worker proximity to the operation and production process. These may yield more informed views on ways of improving production, compared to the views of managers, who can be more remote from daily workplace operations.

The AMO model was first developed by Bailey (1993) and has since been used in a number of key pieces of HPWP research (for example Huselid, 1995; Appelbaum et al., 2000). Boxall and Macky (2009) suggest that almost all work on HPWP uses the AMO, either explicitly or implicitly. An example of a similar model with a slightly different causal chain is the PIRK (power, information, knowledge, reward) model (Vandenberg et al., 1999). PIRK can in some ways be mapped onto AMO – with power being analogous to opportunity, information and knowledge to ability and reward to motivation (Boxall and Macky, 2009). However, Vandenberg et al. (1999) describe the impact of PIRK on organisational performance differently. Rather than explaining improved performance through increased discretionary effort, they posit the existence of a 'direct' route – by increasing employees' PIRK, HPWPs directly improve performance by allowing employees to do their job better – and an 'indirect' route where HPWPs increase the job satisfaction. The analysis for this report adopts AMO because it is more widely used and recommended by reviews of HPWP literature as an integral contributing framework to future development in the field (Boselie et al., 2005).

Theoretical approaches to combining HPWPs

Within the HPWP literature, the majority of studies tend to focus on combinations or bundles of HPWPs rather than individual practices. Appelbaum et al. (2000) put this in historical context by noting that researchers examining 'innovative' work practices had previously studied practices in isolation from each other but that individual work reforms appeared to have only modest and mixed effects. Consequently, the focus shifted to how multiple practices might work together. The idea of 'bundling' practices together into an integrated system of HPWP developed. This is consistent with the AMO model, which very strongly implies that practices need to be bundled together so that the three aspects of ability, motivation and opportunity are covered. If we accept that it is likely that companies use multiple HPWPs, deliberately seeking to benefit from mutual reinforcement and support between them, then studying a single factor (training, for example) makes it difficult to distinguish the impact of training from other influences on firm performance (Huselid, 1995; Boxall and Purcell, 2004; Boselie et al., 2005).

This raises the question over whether sets of HPWPs work simply by adding more practices or whether some consideration needs to be given as to how the practices interact with each other. This is reflected in different approaches to measuring HPWPs, which can be broadly divided into two kinds. Marchington and Grugulis (2000) describe these as the 'universalist' and 'contingency' approaches. Universalist approaches suggest that it is possible to identify a list of organisational 'best practices' that will have the same effects irrespective of firm characteristics such as size, sector and location. This implies that bundles of practices work on the principle of 'the more the better', so performance outcomes increase exactly in proportion to the addition of each new practice. Each individual practice therefore has a direct and equal impact on improved performance. The implication is that in deciding which practices to adopt, firms do not need to consider the coherence of the practices; they simply need to maximise the number they implement. Alternatively, contingency approaches emphasise the importance of context in determining the impact of HPWP and suggest that suitable combinations of practices may vary depending on the organisation's business strategy and context. This means certain practices interact with each other to provide an outcome that is more than the sum of its parts (Appelbaum, 2000). There is some logic to this, which is evident within the AMO model, where each element is dependent on the others. Workers may not be able to contribute fully to improve performance without the right skills, the chance to influence business decisions and the rewards for doing so. Marchington and Grugulis argue that universalist thinking is particularly associated with 'practical' management literature (particularly the work of Pfeffer (1998)), which aims to give firms

relatively straightforward recipes for improving their business performance. However, there are also universalist assumptions made in academic literature as well, critiqued by Purcell (1999).

Universal versus contingency approaches to HPWP and their impact on performance have been tested within empirical studies. One model compared the additive or complementary approach, with a synergistic approach based on interactions of practices with each other and an underlying HR orientation approach (Wood and De Menezes, 2008). Rather than viewing HPWP as a set of practices that are introduced into a firm, the latter perspective claims the existence of an underlying philosophy or orientation that acts as a principle according to which practices are selected. So, for example, a high-involvement orientation would mean a firm-wide commitment to involving employees as well as adopting high-involvement working practices. A 'lean-thinking' approach would involve organisational concern with reducing waste and costs and improving efficiency and would be reflected in the choice of technology and processes as well as HR practices. Wood and De Menezes (2008) find no support for the complementarity and synergy perspectives because there is no evidence of interactions between different practices. They find some support for the theory of an underlying orientation.

Empirical testing of the different models has provided mixed results. Some have found a strong interactive effect between work practices based on teamwork and high employee involvement, HR practices designed to generate high commitment and the adoption of a lean production system (for example, MacDuffie, 1995). Huselid (1995) found some evidence that interactions between sets of HPWPs improved firm performance but almost no evidence that external fit had any real impact. Meta-analyses and reviews of large numbers of HPWPs and performance studies do tend to find links between HPWPs and performance (Wood, 1999; Boselie et al., 2005). Combs et al. (2006) undertook a meta-analysis of 92 recent studies on the HR–firm performance relationship and found that an increase of one standard deviation in the use of HPWPs is associated with a 4.6% increase in return on assets, and with a 4.4 percentage point decrease in turnover. However, Boselie et al. (2005) point out in their review of 104 papers that making comparisons between the studies is difficult because of variations in measurement, context and construction of the question items assessing practices and outcomes. Similar conclusions are reached by other reviews, including that of Wood and Wall (2007) which found that of the 25 studies examined, 19 report some statistically significant positive relationships between HR practices and performance, but with small effect sizes.

The majority of studies that assess HPWP and performance links have been undertaken in the US and UK, with more recent work being undertaken in Asia-Pacific countries. Most research takes the form of single country studies, or more rarely, comparisons between two countries. There is very limited research covering multiple European countries, a recent exception being an analysis of Cranet survey data (Gooderham, Parry and Ringdal, 2008). This analysed the impact of HPWPs in 3,281 firms across 16 EU countries. Fifteen bundles of HR practices were derived through factor analysis and labelled as 'calculative', focused on improving efficiency; 'collaborative', focused on enhancing management/employee cooperation; or 'mixed' in underlying orientation. The findings show that calculative practices were more strongly associated than collaborative practices with gross revenue exceeding gross costs for the organisation, but the overall effects were modest. However, the factor analysis of practices produced 'bundles' in which each element measured a different aspect of the same core HRM practice. So for example, one bundle consisted of employee involvement mechanisms and another consisted of profit-sharing mechanisms.

A further issue regarding how HPWPs fit together is whether it is necessary to have internal fit and external fit (Huselid, 1995). Internal fit requires that all the practices adopted must be internally consistent with each other. For example, an organisation using team-based work organisation may wish to avoid individual performance-related pay systems in case these undermine the collaboration required for effective team performance. External fit suggests that the HR practices also need to support the broader organisational context of the firm, such as the market strategy for products, use of technology, labour market context and sectoral trends in employment practices. This debate links into the issue of the importance of context to HPWP. If external fit is also important for the success of HPWP, then the context of the firm,

its wider aims and strategies need to be taken into account when developing them. It also implies that there may be broader trends in the adoption of different combinations of HPWP that could be evident by sector, nation, size and ownership of organisation. We explore the evidence on these trends later in this chapter.

Issues in measuring the application of HPWPs

There is also considerable emphasis placed in the literature on the application and operation of HPWPs evident in a number of studies. This has been described as the difference between human capital versus human process advantage (Boxall and Purcell, 2004). In essence, acquiring the right kind of employees and training them to the appropriate skill level is not sufficient unless their talent can be harnessed and mobilised. This is dependent on the architecture of HR systems, policies and processes to ensure consistency from management policy to operational practice (Wright and Boswell, 2002) and also on the skill and commitment of line managers (Purcell and Hutchinson, 2006). This has shifted the focus of research from the incidence of HPWPs to their quality and application and has pushed researchers towards the inclusion of employee views through case studies and within surveys. These points are significant given the extent to which many HPWP studies rely on surveys that collect firm information from a single individual, usually an HR manager (Purcell, 1999).

Measuring the application of HPWPs through choice of appropriate respondents is important in assessing how thoroughly practices are applied across organisations. A major methodological theme that cuts across the full range of HPWP is whether practices can be measured simply in terms of incidence or whether the coverage and 'quality' of the practices also need to be considered. For example, it may not be enough to know that a firm uses profit-sharing without understanding what percentage of a firm's employees benefit from it, as the practice is supposed to generate a sense of equality and inclusion across the workforce. If flexible working policies are offered, do all employees believe that managers will treat staff equally and fairly when negotiating flexible working hours? Many HPWP studies focus straightforwardly on coverage. For example, Huselid (1995) asks about the proportion of employees involved in practices such as information sharing and incentive schemes but does not collect more detailed data. Guthrie (2001) looks at firms' 'relative use' of HPWP. Purcell (1999) is highly critical of the lack of attention to 'process' in these studies, pointing out that it is well known that the implementation of practices can vary considerably across firms. This means that the existence of a policy does not guarantee it is put into practice. Van Iddekinge et al. (2009) found, for example, that the use of supposedly mandatory training and selection processes varied considerably across business units of a single firm. Had the firm's HR manager been the only respondent in this study, it is highly likely this internal diversity would have been missed.

Some recent work has further emphasised the importance of considering employee perceptions of HPWP (Nishii et al., 2008; Bates et al., 2009). Nishii et al. (2008) predict that the motivations staff attribute to managers for introducing HPWP will make a difference to the impact of practices on job satisfaction. They find that where employees believe the introduction of HPWP was intended to improve either quality or employee well-being, this had a positive impact on job satisfaction. In contrast, where the perceived reason for introducing HPWPs was either cost-cutting or increased control over employees, this had a negative impact on job satisfaction. When employees believed that new practices were introduced because of 'external' factors, there was no significant impact of HPWP on job satisfaction. How HPWPs are perceived and applied is partly addressed within the ECS through the inclusion of a survey of employee representatives, for which responses were obtained in around 25% of the organisations surveyed.

There are further methodological issues in choosing to study HPWP as a bundle rather than as individual practices. Many researchers, assuming that the performance of individual measures is less important than the performance of the bundle as a whole, have chosen to use indices of practices. Using an index means we do not necessarily know what measures individual firms are using – firms with equal scores might actually use very different practices (Wood and De Menezes,

2008). Indices actually mask the complex relationships between groups of practices and outcomes. Furthermore, it seems plausible that different practices may affect outcome variables in different ways. For example, Van Iddekinge et al. (2009) find that while training has a direct impact on profits, sophisticated recruitment processes only do so indirectly by improving employees' customer service performance. Birdi et al. (2008) find different practices vary in the impact they have over time so that certain practices, such as teamworking, appear to have an impact on firm performance several years after they are introduced, while others have a more immediate effect. These issues can all be obscured by the use of a composite measure of HPWP. However, there is very limited theoretical work that prescribes the order in which HPWPs should be implemented and it is possible that different combinations may have more or less impact in different organisational contexts, particularly considering that the survey has been conducted in so many different countries. Therefore, rather than specifying precise combinations of practices, the analysis is intended to be open and exploratory and to give equal weight to each practice within the overall indices used.

The existence of 'best practice' versus configurational perspectives on the combination of HPWPs has methodological implications. A universalist approach, for example, might suggest that studies should focus on the impact of HPWP on the 'median firm' (Devaro, 2006), using multi-industry datasets to try to make generalisable claims about the effects of HPWP. Such studies accept that context might have some impact on the success of HPWP, but there is nonetheless value in attempting to identify the general effects of HPWP. Alternatively, a more contingency-based approach would be to attempt to map different configurations of HPWP for different organisational situations, focusing on their implementation and functioning in specific settings. This debate has practical implications given that, in general, studies of individual industries (notably steel and automobile manufacturing) have found a strong positive impact on both individual and firm-level outcomes, whereas studies of multiple industries have produced more ambiguous results (Boxall and Macky, 2009). While many authors are critical of universalist assumptions, being able to generalise findings beyond individual contexts is clearly appealing and useful, particularly in policy contexts, when it is important to identify implications that apply to as large a range of different types of organisations as possible to maximise the relevance of policy initiatives. More fundamentally, the meta-analyses conducted have failed to identify a sufficient consensus in HPWP combinations by scholars to enable us to risk selecting particular configurations over others (Boselie et al., 2005). Pursuing the analysis by linking individual practices to a general theoretical framework, such as the AMO model, appears to be the optimal approach until the field is more fully developed.

This study neither seeks to treat HPWPs as a best practice bundle nor as a specifically configured bundle. Mindful of the different employment traditions and regimes operating in European countries, we believe this will lead to a wide array of combinations of practices which may differ subtly between countries. We therefore check each practice first for individual impact with each performance outcome and then combine practices into an index which we test for associations with each of the performance outcomes.

HPWPs selected for analysis

This section outlines each of the high-performance work practice areas selected for inclusion in the analysis from the ECS, explains the potential contribution of the practices within the AMO model and summarises some of the main empirical findings to date concerning links between the practice and organisational performance outcomes. The practices we have selected for analysis are determined partly by those available within the ECS and they focus on the areas of training, pay, flexible working time and social dialogue.

Training

Training primarily reflects the ability dimension of the model by enabling employees to acquire the skills they need to meet the demands of a more participatory work environment. Human capital theory is often used to explain theoretical links between training and performance. Human capital refers to the 'aggregate knowledge, skills, abilities and other

characteristics' (Van Iddekinge et al., 2009) of employees and identifies these as a major factor in understanding firm performance. Human capital can either be generic or firm-specific, the former referring to the general abilities of employees in terms of education and cognitive ability and the latter to skills and abilities that are learned within and applicable to particular firm contexts (Van Iddekinge et al., 2009). Where human capital is 'firm-specific' and cannot easily be transferred outside a firm or imitated, it can become a source of competitive advantage. Formal training is one way a firm can improve its stock of human capital, particularly firm-specific human capital (the other key method being recruitment practices) (Hatch and Dyer, 2004; Van Iddekinge et al., 2009).

Extensive training is noted as a key aspect of HPWP (Birdi et al., 2008). Whitfield (2000) identifies a number of ways in which training might support HPWP. Greater worker involvement and participation might require workers to be trained to think holistically about their work process. Flexibility in work processes requires multiskilling and teamworking may require some form of formal training in interpersonal skills. Alongside the ability strand of the AMO model, training may also contribute to motivation because employer-provided training represents an investment in employees and may be interpreted by employees as a sign of a firm's commitment to its workforce (MacDuffie, 1995; Vandenberg et al., 1999). Highly skilled workers may also be easier to retrain and reskill to meet changing job demands.

Research has found correlations between both the adoption of individual HPWP and bundles of HPWP and increased training (Whitfield, 2000). In particular, bundles of HPWP tend to increase the intensity of training. Furthermore, where previous studies of workplace training have found that training tends to be provided for workers with an already high level of skills, Whitfield found some evidence to suggest that HPWPs are linked to increased training at all levels of an organisation. Similar correlations between the adoption of HPWP and training are found by Osterman (1995) and Lynch and Black (1998). Osterman suggests that quality measures such as total quality management and quality circles are more likely to have a positive effect on training than the introduction of team working and job rotation.

Sectoral studies show links between certain forms of training and improved individual-level performance, for example in the semiconductor industry (Hatch and Dyer, 2004). In particular, investing in training that improves the problem-solving skills of machine operators was found to have reduced the number of production defects. Generic training on how to use machines appeared to have little effect on performance, while training on multiple pieces of machinery had a negative effect, suggesting that the focus of training may be important to improve outcomes.

More generally, there are positive findings concerning the effects of training on performance from a longitudinal perspective (Tharenou et al., 2007; Van Iddekinge et al., 2009). Increasing the number of staff completing a full introductory training programme has a positive effect on organisational performance measures, including customer service performance, staff retention and profits. Furthermore, the effect of training on profits appears to be direct rather than mediated through other outcomes such as improved customer service. Other studies have shown variations in impact across organisations. Birdi et al. (2008) found that, in some circumstances, training has a strong positive effect on productivity and in others a strong negative effect. Why this should be so is unclear, but variability in the quality of implementation is a potential explanation. An alternative explanation may be that the impact of training on firm performance is highly contingent on the context of the firm. This perspective is supported by recent meta-analyses of links between training and organisational performance. One review that considered 67 studies found that training is related to positive human resource outcome indicators and proximal organisational performance indicators such as quality, but less closely related to productivity or sales indicators (Tharenou et al., 2007). There was also support for a contingency argument to the impact of training because stronger effects are found where organisations invest intensively in technology, R&D and capital and supported business strategies. Overall, the review also showed support for a universal application of training because training practices were related independently to organisational outcomes, although they showed very weak links to financial indicators. Put simply, all firms appear to benefit from training, but matching training practices as closely as possible to organisational needs appears to result in greater benefits.

In this analysis, question responses from the survey to assess the use of training as a HPWP are as follows.

- Need for training checked – this indicator assesses whether organisations consciously monitor the competence of their workers to ensure they have the ability needed to do their jobs.
- Proportion of workers in high-skilled jobs – this measure may show whether the company has adopted a deliberate strategy to upskill workers. It should be noted that it may also reflect sectoral norms of skill levels in particular industries.
- Time off for training – this measure illustrates organisational commitment to training through willingness to release employees from productive work to undertake it.
- Training for new tasks – this indicator shows whether the organisation supports employees to acquire new skills.

Pay

Pay is potentially strongly linked to motivation in the AMO model through both pay level and pay systems, but there is considerable controversy over the role of pay in HPWP and whether or not it motivates. Along with motivation, pay may also contribute to ability through the recruitment and retention of skilled staff through base pay levels. When recruiting, firms adopting HPWP may find they need to offer a high level of pay to attract the most skilled workers (Way, 2002). Similarly, Guthrie (2001) argues that firms introducing HPWP may need to pay above market wages to retain staff who have received training and are accustomed to the demands of working in a high-performance environment. Firms that introduce HPWP but that are unable to keep labour turnover low tend to find that HPWP has a detrimental effect on productivity. There are a range of systems that have been used to link pay to performance in an effort to motivate employees, notably individual performance-related pay, group performance-related pay and forms of financial participation including employee share-ownership and profit-sharing (Appelbaum et al., 2000; Kessler, 2010).

Individual performance-related pay involves linking pay to the performance of individual workers. Depending on the context, 'performance' may be defined purely on numerical output or it may include some measure of quality. At a theoretical level there is some debate about the compatibility of performance-related pay and HPWP. A number of authors have suggested that individual performance-related pay may reduce trust and discourage cooperation if employees compete to achieve higher levels of pay (Appelbaum et al., 2000; Pendleton, 2006). Additionally, Belfield and Marsden (2003) note that a key issue with performance-related pay is handling the monitoring of performance. Many of the processes that improve performance monitoring are to an extent inimical to other aspects of HPWP, for example repetitive tasks, a lower importance placed on teamworking, short tenure, lack of union recognition and larger work groups. Notably, Wood (1996) found that managers attempting to develop a high-commitment environment in manufacturing plants tended to be sceptical about the use of individual performance-related pay systems, emphasising their potential negative effects. In contrast, group-performance pay schemes may be more attractive than individual schemes, particularly from a HPWP perspective, because they should foster cooperation and encourage employees to think of how they can contribute to wider team or plant performance rather than focusing narrowly on their own role (Appelbaum et al., 2000; Marchington and Wilkinson, 2002).

Employee share-ownership involves the purchase of shares by or on behalf of a firm's employees. A major distinction in employee share-ownership schemes can be made between firms where employees are minority and majority shareholders, the former being more typical but the latter being more likely to see employees involved in management (Kaarsemaker, Pendleton and Poutsma, 2010). Additionally, there are a number of ways employees might come to own shares in their company. Typically, either shares are donated to employees by the firm, employees are able to choose to buy shares, usually at favourable rates, or employees receive share options, the option to buy shares at a later date (Kaarsemaker, Pendleton and Poutsma, 2010). Two key problems associated with employee shareholder schemes are 'line of sight' issues, where individual effort cannot be easily linked to improved payouts, and 'free-rider' problems,

where employees decide they can benefit from share scheme payouts without putting additional effort in (Pendleton, 2006). This means the theoretical link between such schemes and individual motivation is less strong than with performance-related pay. However, such problems can be counteracted by the presence of other HPWPs such as teamworking, where peer pressure may compensate for any incentive to shirk caused by group-based pay systems. There are also advantages, notably in jobs where monitoring of employee performance is difficult, because share-ownership schemes allow employers to make some kind of link between pay and performance. Employee share-ownership schemes may also serve to align employee interests with those of the organisation, rather than focusing only on their own role. Additionally, share-ownership can in principle provide employees with additional rights to those normally enjoyed by employees.

Profit-sharing bears some resemblance to employee share-ownership, in that both can be considered forms of 'financial participation' (Kessler, 2010). Under profit-sharing, employees receive a payout either when profits reach a certain level or improve by a set amount (Kessler, 2010). It shares many of the same benefits and difficulties as employee share-ownership schemes, it links pay to performance where performance is hard to monitor and encourages a concern for organisation-wide performance, but it also has a slightly ambiguous theoretical effect on individual effort. This is because performance pay that is related to collective performance tends to be more effective where the group is clearly identifiable and where it is small enough for individual performance to make a meaningful contribution to overall performance. This means that organisation-based profit-sharing, like employee share-ownership plans, may have difficulties raising employee motivation where the line of sight between individual effort and performance is unclear. This points to the need to use collective performance pay alongside communication and involvement/social dialogue practices to reap the maximum benefit.

It should be noted that the pay schemes mentioned are not mutually exclusive. For example, there is evidence that companies that use individual performance-related pay incentives may adopt employee share schemes to help counteract the individualising effects of the performance-related pay (Pendleton, 2006).

The evidence on the effectiveness of performance-related pay on organisation- and individual-level performance is mixed (Marchington and Wilkinson, 2002). In his study of the impact of HPWP on job satisfaction in the steel industry, Berg (1999) finds performance-related pay does not improve job satisfaction, though he suggests this may be an idiosyncrasy of the steel industry, where such pay systems have been established for longer and are now seen as standard work practices. Heywood, Siebert and Wei (1997) find payment by results to be positively related to organisational performance both in terms of productivity and financial performance. For individuals, the effects of incentive pay may be less positive than for organisations. Both group and individual pay practices may contribute to negative job-to-home spillover (White et al., 2003). Group-related performance pay had this effect for women, while individual incentives affected men. White et al. do not consider the implications of this for firm performance, but two possible alternatives might be suggested, firstly that the negative job-to-home spillover will have a detrimental impact on employee motivation, resulting in reduced discretionary effort, or alternatively, the negative spillover could be indicative of a higher level of discretionary effort.

Employee share-owning or profit-sharing schemes demonstrate mixed evidence in generating employee motivation. Brown, Fakhfakh and Sessions (1999) find positive effects for share ownership and profit-sharing schemes, with the former reducing employee absence by 14% and the latter by 11%. In a review of employee share-ownership literature, around two-thirds of studies identified positive effects, with the remainder being inconclusive, although it is noted that there is little consideration of different types of share-ownership schemes (for example, minority and majority share-ownership) (Kaarsemaker, Pendleton and Poutsma, 2010). In terms of company outcomes, employee share-ownership schemes appear to have a positive but quite small effect on productivity and financial performance. There is some indication that the effect is greater where there is a majority employee shareholding and stronger evidence that the effect is dependent on measures to permit employee participation (Blinder et al., 1990).

In this analysis, responses to the questions from the survey assessing the use of pay systems as a high-performance work practice indicate particular characteristics of company functioning.

- Use of profit-sharing – presence of a scheme to enhance employee motivation through collective rewards indicates commitment on the part of the organisation to share its profits.
- Coverage of profit-sharing – this assesses the selectivity with which organisations apply profit-sharing. More extensive coverage is indicative of greater commitment to apply HPWPs by including a greater proportion of staff.
- Individual performance pay for staff other than top managers – presence of a scheme indicates organisational willingness to provide financial rewards to motivate workers regardless of status.
- Individual performance pay offered for at least 25% of staff – presence of a financial incentive scheme for at least a significant minority of staff indicates willingness to provide financial rewards to a wide group of workers.
- Share-ownership – presence of a scheme to enhance employee motivation through a stake in the organisation indicates commitment on the part of the organisation to treat employees as organisational citizens with equal status to managers.
- Share-ownership offered to all employees – presence of a scheme open to all staff indicates commitment on the part of the organisation to treat all employees as organisational citizens with equal status to managers.

Social dialogue

The EU describes social dialogue as 'discussions, consultations, negotiations and joint actions involving organisations representing the two sides of industry (employers and workers)'. Social dialogue is essentially what Wood and Wall (2007) describe as the employees' 'voice' in an organisation. Voice can take two forms – either procedures for employees to raise grievances and undertake collective bargaining or to provide ideas for ways to improve products, services or work processes. Such dialogue can take place either through employee representatives, including unions, or, more directly, through small groups or individual dialogue between managers and employees. Wood and Wall (2007) argue that despite the theoretical importance of employee voice in HPWP, such notions have increasingly been stripped from empirical research on HPWP, with many studies including only one form of employee voice, if any.

Social dialogue is most clearly associated with opportunity in the AMO model. Social dialogue is, above all, about the participation of employees in workplace decision-making. For example, Bryson, Forth and Kirby (2005) suggest that unions can act as a vehicle for employee voice, improving the flow of information between management and employees. It may also have an impact on motivation. This is because systems in which employees feel that their views and opinions are being taken into account are likely to be deemed more procedurally fair, and thus make employees more inclined to exert discretionary effort (Way, 2002). Social dialogue may also contribute to the ability aspects of the model, because where employees have sufficient information to be able to make informed judgements and suggestions, they may be able to improve their own performance. In addition, having a voice in an organisation may give high performers an alternative to exit when they have grievances. Consequently, social dialogue might help firms retain skilled staff (Bryson, Forth and Kirby, 2005).

There is some evidence that formal union representation may have an impact on HPWP. Bryson, Forth and Kirby (2005) find that the combination of union representation and HPWP has a positive effect on labour productivity, compared to a very marginal effect of HPWP without unionisation. However, the increase in productivity was not matched by improved financial performance, leading the researchers to conclude that the HPWP–union relationship involves unions extracting concessionary wage increases for allowing the introduction of HPWP rather than the generation of 'mutual gains' between employees and employers. This suggests that employees may benefit from this type of HPWP more than managers. There is some ambiguity in studies that have assessed the impact of combinations of direct and indirect, union

and non-union voice mechanisms. While some analyses, such as those of the EPOC (Employee direct Participation in Organisational Change) survey, have found an additive effect of greater numbers of participatory mechanisms being beneficial (Sisson, 2000), others have found lesser impact where union and non-union voice mechanisms are combined. Much depends on the dynamics of relationships and interactions between the different structures and processes within organisations, how competent the actors who are managing each process are, and what the attitudes of employees and status of each form of involvement are.

However, the extent and quality of social dialogue prior to the introduction of other HPWPs may also have an impact on the adoption of HPWP. Positive interaction between union presence and HPWP is likely to be contingent on the strength of the union and the quality of its relationship with management. Where unions and management collaborate, this can create an atmosphere of 'mutual gains', with employee trust leading to productivity gains through organisational change. However, where the relationship is more combative, the potential benefits are less likely to materialise. There is a suggestion of a virtuous circle here; good pre-existing relationships are likely to enhance the impact and benefits of social dialogue. This makes it difficult to determine whether the quality of relationships is an outcome or cause of the impact of social dialogue techniques.

Studies of employee voice, compared to other HPWPs, tend to find that voice has a similar effect to other practices, with a generally positive effect on productivity (for example, Ichniowski et al., 1997). Berg (1999) finds that good employee–management relations are positively related to job satisfaction, but practices that promote consultation with employees do not seem to improve job satisfaction. Berg suggests that this may be the result of the industry that was surveyed (steel) already having high levels of consultation, so that it becomes an expectation rather than a source of job satisfaction.

Other dimensions of employee voice have also been assessed in terms of their links to organisational performance. Information-sharing by management appears to have a variable impact depending on the type of information shared and the context of the firm (Peccei et al., 2003). Sharing information on performance targets has an overall positive impact on employee organisational commitment, which in turn improves productivity, while sharing information on operational targets only has an impact on productivity where organisational commitment is high. Sharing general information about a firm appears to have little or no effect. However, the presence of unions appears to alter these results somewhat. In unionised settings, the impact of general information produces a positive, direct impact on productivity, while the impact of sharing information on financial and operational targets is reduced.

In this analysis, questions from the survey assessing the use of social dialogue mechanisms as a HPWP are as follows.

- Presence of employee representation mechanisms – this may indicate commitment by the organisation to providing employees with opportunities to express their views and influence decisions.
- Presence of ad hoc consultation mechanisms – for organisations that are less likely to have formal representation structures (for example, those in non-unionised sectors, small organisations not covered by employment legislation or those located in countries without legislation requiring employee representation), use of alternative mechanisms may indicate similar commitment by the organisation to providing employees with voice opportunities to express their views and influence decisions.

Teamworking

Teamworking is used in many forms. One of the key issues identified in the literature is the degree of autonomy held. Teams can be divided into those that are closely managed (where workers are organised into teams but management retains authority) and self-managed teams (where a significant amount of responsibility is devolved from managers to teams) (Devaro, 2006). However, this itself masks the different levels and forms of autonomy that can be given to teams.

The Workplace Employment Relations Survey (WERS), for example, includes three measures of autonomy: whether teams are given responsibility for specific products or services, whether teams can jointly decide how work is done and whether teams can appoint their own team leaders (Procter and Burridge, 2008).

Teams can function online, as part of the work process, or offline, away from it. Online teams are more fully integrated into the firm's production process where groups of employees share tasks between each other. Offline teams are those that meet and discuss matters away from the work itself. The classic example of an offline team is a 'quality circle' where employees meet to discuss potential improvements to working methods (Batt and Appelbaum, 1995; Appelbaum et al., 2000).

Consequently, teamwork may support all three elements of the AMO framework. More autonomous teams that have the power to control how work is undertaken contribute to employee opportunity and may do this on the job (online teams) or in meetings away from the work itself (offline teams). Team-based work organisation can also improve motivation, since many early advocates suggested that teamwork – the opportunity to cooperate and collaborate with others in a small group – made work intrinsically more satisfying (Appelbaum et al., 2000; Way, 2002). Finally, the collaborative and cooperative nature of teamworking may enhance employees' ability by enabling informal learning between employees (Ashton and Sung, 2002; Way, 2002; Birdi et al., 2008). There has been some debate over the importance or otherwise of autonomy in teamwork, with writers divided over whether teamworking is beneficial in itself or whether teams need autonomy to be effective (Devaro, 2006; Birdi et al., 2008).

However, it has also been suggested that the introduction of teams may have a negative effect on a firm. Devaro (2006) calls attention to the potential downsides of autonomous and non-autonomous teamworking. Teams in general are vulnerable to 'free-rider' issues where unmotivated staff find they can avoid working if the team as a whole produces adequate results. Where autonomous teams are introduced, the loss of management control may have detrimental effects if the newly autonomous employees are not capable of making decisions together. Other critics of autonomous teams suggest they are difficult to implement in any meaningful way and may even reduce the autonomy of individual workers by replacing management control with 'concertive control' from peers (Marchington and Wilkinson, 2002). In these circumstances, teams might be perceived by employees as stressful and intrusive.

A number of studies find evidence that teamworking can have a positive impact on a range of outcome variables, but that the type of team and the level of autonomy enjoyed by teams have a significant impact.

For example, Berg (1999) finds that teamworking is not significantly related to job satisfaction when other factors are controlled for. Teamworking in itself is less important than whether the structure of the job provides an opportunity for employees to use their skills, a degree of autonomy and offers learning opportunities. This adds credibility to the suggestion that autonomous teams are more likely to have a positive impact on performance. Batt and Appelbaum (1995) also look at teams with a degree of autonomy in the telecommunications and apparel industries and compare the impact of online and offline teams. They find that online work teams, in which employee autonomy is more directly linked to production, tend to elicit higher levels of commitment, job satisfaction and self-reported work quality. Procter and Burridge (2008) find that teamworking alone has a positive impact on firms' financial performance and productivity but that allowing teams to be 'semi-autonomous' produces an additional positive impact on productivity and work quality, although not financial performance.

While much of the literature finds beneficial effects from greater autonomy for teams, Devaro (2006) reaches the opposite conclusion. He finds that teamworking in general has a positive impact on financial performance and productivity that clearly outweighs any negative impact resulting from the introduction of teamworking, but finds no such effect for autonomous teams. Devaro suggests his divergent results are a product of his use of organisational performance measures where other studies use employee satisfaction measures. However, Procter and Burridge (2008)

use the same dataset (WERS 98) with the same performance measures. What may be more important is the definition of autonomy adopted. Devaro defines autonomous teams only as those that have control over how they do the work, while Procter and Burridge's concept of 'semi-autonomy' includes teams where members work together, are given responsibility for specific products or services and can decide jointly how the work is done.

Additionally, it must be noted that the impact of teams may be heavily dependent on context. Devaro (2006) emphasises the highly variable effect of autonomous and non-autonomous teams across different firms. Depending on the 'production context', teams can have a negative, neutral or positive effect on financial performance. For example, Berg (1999) found that in the steel industry, offline teams had a more significant impact on job satisfaction than online teams, contradicting Batt and Appelbaum's (1995) results for the apparel and telecommunications industries noted above. Berg suggests that offline teams are more relevant in the context of the steel industry, where cross-department collaboration can have a significant impact in improving plant processes. Similar variations in the impact of autonomous teamworking are identified by Birdi et al. (2008), who find the effect of teamwork on productivity varies from strongly negative to strongly positive across companies. Furthermore, there appears to be a considerable delay between the introduction of teamworking and its impact on productivity, with increases tending to be most significant six to nine years after teamworking is introduced.

These findings strongly suggest that the effects of both autonomous and non-autonomous teams are not straightforward, but rather that the context in which teamworking is introduced, and the extent to which the system is embedded in the organisation, are significant.

In this analysis, indicators assessing the use of team-based work organisation as a HPWP are as follows:

- Management belief that working in teams is an important characteristic of the organisation – presence of this belief constitutes evidence of effort to provide opportunities to motivate employees through work structure which may provide social rewards, greater task variety and possibly more interesting work.
- Team autonomy – presence of this feature of teamworking suggests that managers are making an effort to devolve responsibility to employees, which should enhance motivation and give greater opportunity to influence the work process.

Working time

The capacity for employees to control working hours is often referred to as 'flexitime' (Eaton, 2003) or 'flexible working hours'. Practices covered by these labels include the ability to choose start and finish times, the ability to 'accumulate' hours (working longer on some days than others) and the choice of a range of pre-determined start and finish times (White et al., 2003; Eaton, 2003). The aim of such policies is to help employees to balance their work commitments with their personal lives. It should be noted that while flexible working time is a core element of policies ostensibly aimed at helping employees balance their work and personal lives, such policies are not reducible to flexitime. For example, employer assistance with childcare or the provision of information and referral services may be a major element of so-called 'family-friendly' policies (Perry-Smith and Blum, 2000). Theoretically, flexible working hours can be linked to motivation in the AMO model, the expectation being that the ability to balance work and personal commitments will increase job satisfaction and encourage the use of discretional effort (Appelbaum et al., 2000; Perry-Smith and Blum, 2000).

This is particularly important given that there is some evidence that HPWP can lead to increased job strain and the intrusion of work into home life. Hyman et al. (2003) identify a number of ways in which work intrusion into personal life can have a detrimental effect on individuals. For example, in a study of software workers, having to take work home is strongly associated with employees feeling stressed, exhausted and that work is affecting their health. However, work

demands are not necessarily related to a higher level of commitment to work, but rather workers appear to accept them as normal expectations of employers.

This suggests that flexible working is a double-edged sword and raises the question of how sustainable improved performance from higher levels of discretionary effort is, if employees are overworking. White et al. (2003) find a number of HPWPs are positively associated with 'negative job-to-home spillover', meaning that work commitments prevent employees from spending as much time as they would like with their family. However, they find that the use of flexible working practices can, in some circumstances, mitigate negative job-to-home spillover. For women, flexible hours reduced the job-to-home spillover, while for men the ability to choose their own start and finish times had the same effect.

Perhaps because of the concerns about the impact of HPWPs, a number of studies have suggested that organisations introducing HPWP are more likely to adopt flexible working policies. Osterman (1995), for example, suggests that high-performing organisations might introduce a range of family-friendly policies that help employees balance work and home commitments to engender the high levels of employee motivation necessary for HPWP to be successful. He finds high-commitment work systems tend to be associated with family-friendly policies. Of the three explanations for the introduction of family-friendly policies considered – as part of a HPW system, as a pragmatic response to employees' problems or as a result of having a highly developed HR function – the HPWP explanation best fits the data. Other studies support the argument that appropriate use of HPWPs support work–life balance. Other authors agree with Osterman that this is partially because of the greater propensity among HPWPs to use family-friendly policies, but they also argue that HPWP help employees cope better with the demands of work and life (Berg, Kalleberg and Appelbaum, 2003). They argue for the existence of 'a spillover from work to family such that being able to participate in high-performance work systems will enable people to balance their work and family lives'. This may improve discretionary effort and motivation because employees may be better able both to attend the workplace and to concentrate and contribute fully when present. This conclusion contradicts the argument that HPWPs are more likely to cause work to intrude into employees' personal lives. There is no attempt to measure the performance implications of the research findings, but there is an implicit assumption that workers who are able to balance work and family life are likely to be more effective.

In terms of the impact of flexible working policies on performance, research has found links between the provision of working time choice and employee absence rates. In particular, women with lower levels of control over working time were found to be at a higher risk of medically certified absence than women with a high degree of working time control (Ala-Mursa et al., 2004). This may not necessarily be due to poorer health among this group of staff, but may arise from the need to provide childcare if usual arrangements break down. Working time control was also related to sickness absence among two male subgroups – manual workers and those with dependent children were at a higher risk of sickness absence when they lacked control over their working hours. Clearly, policies that enable workers to reconcile domestic/personal needs with paid employment are not only likely to ensure that firms have sufficient workers with required ability, but also to enhance the motivation and commitment of their staff. There is also more direct evidence of the impact of such policies on organisational performance measures. One study finds that family-friendly policies have a positive effect on a range of firm-level performance variables, including market performance, profit-sales growth and perceived organisational performance (Perry-Smith and Blum, 2000). However, it should be noted that flexible working time is just one item in a bundle of family-friendly policies analysed and the evidence suggests that firms using a wide range of family-friendly policies are more likely to benefit from improved performance. Other authors are more sceptical about the extent to which flexibility over working time can improve work–life balance (Hyman et al., 2003). Family-friendly policies (including the ease of obtaining time off for personal matters) in some cases slightly reduce the negative effects of work demands but rarely remove them altogether, suggesting that managing the overall level of job demand placed on workers may be more important. Hyman et al. raise particular concerns about the lack of employee influence over the design of family-friendly policies and there is some debate about whether workers in all types of jobs and on

different types of contract have equal access to such policies and whether managers are equally likely to grant flexible working requests to staff of different genders, in different roles and different levels of seniority.

Employee perceptions of access to policies have been linked to organisational performance outcomes. Eaton (2003) emphasises the importance of the difference between formal and informal flexible working policies and their perceived usability by staff. This research argues that simply assessing whether firms have formal flexible work policies or not is insufficient and that we also have to consider whether employees perceive these policies as usable. Research evidence showed that flexible work policies are only positively related with employee commitment where they are perceived as usable. Both formal and informal policies appear to have a positive impact on productivity, but this is greater where policies are perceived as usable.

In this analysis, responses to questions assessing the use of flexible working time as a high-performance work practice suggest particular corporate atttitudes.

- Presence of flexible working hours – this indicates willingness to accommodate workers' individual preferences and commitments outside the workplace, which may enhance their motivation.
- At least 20% of staff using flexible working hours – this provides evidence that the organisation is committed to implementing flexible working in practice, rather than simply being a policy. The 20% level is chosen as a cut-off point to ensure an appropriate spread of responses across the categories.
- Part-time working undertaken by more than 20% of staff – presence of this practice could suggest that managers make a serious effort to make part-time working available to a significant proportion of the workforce. The 20% level is chosen as a cut-off point to ensure an appropriate spread of responses across the categories.
- Managerial staff in part-time roles – presence of this practice suggests greater commitment to flexible working as a HPWP because evidence suggests part-time working may be more difficult to implement for senior staff.

Organisational context

All analyses of HPWP and organisational performance take into account a number of control measures. This is partly because of researchers' early attempts to find generalisable practices that can work in all settings. However, it is also recognised that different kinds of organisations will apply different kinds of HPWPs, and different countries may place more or less emphasis on particular practices. These factors are also important in seeking to explain the diffusion as well as the impact of HPWP.

Size

Organisational size has been identified as an important variable in understanding the adoption of HPWP. The evidence suggests that, in general, use of HPWP is much higher among large firms than smaller ones, for a variety of reasons (Bacon and Hoque, 2005; Belt and Giles 2009). One consequence of this is that the majority of research into HPWP has focused primarily on larger firms, usually excluding firms with fewer than 100 employees (Way, 2002; Messersmith and Guthrie, 2010). Smaller firms decide to adopt HPWP for a number of reasons (Cassell et al., 2002). The decision to introduce HPWP tends to require the emergence of a specific business problem, an individual within the firm able and willing to 'champion' the adoption of new practices and, crucially, the existence of sufficient resources.

Three reasons are suggested for why the adoption of practices in small firms may differ from larger firms (Messersmith and Guthrie, 2010). Firstly, by their nature, small firms tend to require a greater degree of flexibility from their employees as individuals have a greater variety of tasks. Secondly, human resource decisions can have a larger impact

on firms with fewer employees – a poor recruitment decision or the failure to retain a skilled member of staff is likely to be more significant in a firm of 25 than in a firm of 25,000. Thirdly, small firms are likely to have fewer formal procedures in place than larger firms, meaning HPWP may be implemented differently in smaller firms, especially where there are no specialist HR staff. Studies have found that HPWPs designed for larger firms may need to be translated to make them feasible and relevant in the less formal environment of smaller firms (Edwards, 2007). This means that in studying the use of HPWP in small firms, we need to be aware that practices may be implemented in a different way, and that due to the lack of formal procedures, HPWPs may exist in name only (although this may also occur in larger firms).

Despite the lower take-up of HPWPs among smaller businesses, there is evidence that they can benefit from such practices. Way's (2002) study of firms employing fewer than 100 employees found HPWP reduced overall turnover and voluntary turnover of staff and increased perceived productivity, but had no actual impact on labour productivity. Of the measures considered, only pay level, group-based performance pay and the number of staff had a significant impact. Messersmith and Guthrie (2010) find that the use of HPWP in small firms is associated with higher levels of sales growth, product innovation and organisational innovation than in bigger ones.

Sector

A number of writers have suggested that HPWP is more suited to certain industries. For example, Appelbaum et al. (2000) suggest that while manufacturing firms can benefit from HPWP, such practices may be less appropriate in the service sector due to differences in competitive strategies between sectors. Specific research into the service sector expands this argument to suggest that within the service industry, the type of customer being dealt with determines the use of HPWP (Batt, 2000). Where individual customer transactions are simple and low value, traditional mass production techniques are likely to be used involving low-skill, low-involvement jobs. However, with segments of higher-value customers, where transactions are more complicated and relationships between customers and employees are more important, investment in HPWP is more likely to pay off for the organisation.

Evidence suggests that while there are 'universal' effects of HPWP in raising productivity across sectors, different sectors have a moderating impact on the relationship (Datta, Guthrie and Wright, 2005). HPWPs are most effective in sectors associated with low capital intensity, that are growing and, in particular, have high levels of differentiation, where companies compete on the particular advantages of their products or services rather than on price, for example.

Ownership

Whether a firm is local or foreign owned may affect the impact of HPWP. The debate over foreign ownership and human resource practices ties in with the effect of the country where the company is located, as discussed below. There is a suggestion that local firms more sensitive to their national, institutional and cultural context may be more able to implement HPWP. Evidence from studies in east Asian companies shows that HPWPs introduced by locally owned firms fared better in terms of reducing organisational-level staff turnover than foreign-owned firms (Yalabik et al., 2008).

The impact of private equity and management buyouts on management practices has also been considered. In particular, concerns have been raised that private equity buyouts are associated with worsening working conditions and cessation of practices beneficial to employees as the new owners seek to reduce employment costs. Alternatively, insider buyouts by employees or managers (or both) might be expected to seek to protect or even extend HPWPs that benefit employees (Bacon et al., 2008). Empirical evidence on these issues is mixed. For example, Bacon et al. (2008) find that although management buyouts tended to lead to a higher level of HPWP than private equity buyouts, even private equity buyouts saw an increase in the use of such practices.

Expansion/contraction and major change

Organisations experiencing significant growth or decline are likely to show different propensities to use HPWP and to use different HPWPs at each phase of change. This follows the 'life cycle' models of firm development (Fombrun, Tichy and Devanna, 1984), which proposes that organisations may invest more in HPWP while they are expanding and reduce investment during periods of decline. This is significant for the economic context during which the survey was conducted, which was experiencing a profound recession in many sectors.

Country of location

Variations in national contexts are also thought to have an impact on the adoption and effectiveness of HPWP. At the most basic level, practices considered 'high performance' in some countries may be standard in others. Within Europe there are a variety of different national employment relations regimes and histories, which impose different regulatory requirements, as well as expectations, on a firm's behaviour. Paauwe (2004) notes that many HPWPs are required by law in the Netherlands and in several European countries social dialogue practices, in particular, are required by national law. Beyond this, it has been argued that variance in the institutional and social structures of different nations can affect the likelihood of HPWP being adopted and achieving the desired outcomes. Institutional arguments are put forward suggesting HPWPs are more suited to collaborative or coordinated economies, rather than economies based on market coordination. For example, firms in coordinated or collaborative nations such as Germany and Japan are more likely to delegate power to employees than in market-oriented economies such as New Zealand, the US and UK (Brookes, Brewster and Wood, 2005). American multinationals operating in coordinated economies are more likely to adopt practices such as employee consultation than they are in their own country (Parry, Dickman and Morley, 2008). Explanations of differences in national cultures are also sometimes advanced, for example suggesting that HPWPs function less well in individualistic nations such as the UK and US (Brewster, 2004). However as Butler et al. (2004) note, in recent years there has been an increasing diffusion of HPWP in nations where they would not be expected to flourish according to institutional and cultural theories. That said, straightforward diffusion of practices tells us little about the maintenance or success of these practices.

Organisational outcomes

Outcomes of HPWPs are usually assessed at three main levels:

- financial outcomes (for example, profits, sales, market share, accounting measures);
- organisational outcomes (for example, output measures such as productivity, quality and efficiency);
- HR-related outcomes (for example, attitudinal and behavioural impacts among employees, such as satisfaction, commitment and intention to resign from their job) (Boselie et al., 2005).

There are clear advantages and disadvantages in the use of these measures. Financial and organisational outcomes are of most interest to managers seeking financial benefit from implementing HPWPs through 'bottom line' impact. Providing evidence of impact on these indicators has been important in stimulating the diffusion of HPWPs. There is also policy interest in the potential that HPWPs may make to improving business performance because of the overall benefits in terms of economic growth. For individual citizens and policy-makers, outcomes for employees and their perspectives on HPWP are also important. This is partly because of interest in the provision of decent work and high-quality jobs from a moral perspective, but also because of the potential link in the causal chain between employee outcomes, operational outcomes and financial outcomes. Much of the early research into HPWP was criticised for ignoring the 'black box' of the performance process, that is, how HPWPs affect organisational outcomes through influencing employee behaviours (Paauwe, 2009; Purcell, 1999; Wood, 1999). Such links may also be important because of the proximity between the application of HPWPs and the different outcome measures. The further away from the point of application of HPWPs,

the greater the chance of numerous other factors affecting the performance indicator being measured. So, for example, profits may be affected by exchange rates, unforeseen weather changes, costs of capital equipment, changes in government regulation and unpredicted shifts in consumer demand, over which firms may have little control. This makes it important to assess outcomes that are close to the point of influence that employee behaviour has over organisational performance, as well as higher-level outcomes. This will help to avoid underestimating the benefits of HPWP through measuring only outcomes that are influenced by numerous other factors external to the organisation.

In considering positive organisational performance outcomes that may result from HPWPs, we must also acknowledge the counter arguments, since some research has shown that HPWPs achieve improved organisational performance at the expense of employees. In the long term, this may make increases in performance temporary and unsustainable due to 'burn-out' and stress experienced by employees. Put briefly, it has been argued that by attempting to achieve greater levels of commitment to work, HPWPs increase the likelihood that work will intrude into employees' personal lives. Ramsay, Scholarios and Harley (2000) find a significant association between HPWP and higher levels of 'job strain', a composite measure that indicates employees do not feel they have enough time to complete their work in normal hours and worry about work outside work. We therefore use a balanced set of indicators of organisational performance, incorporating both employee and employer perceptions.

In this analysis, questions from the survey that are used to assess the performance outcomes of HPWPs are as shown in the two following boxes.

Employee outcome indicators

Low motivation of staff rated as a problem by managers – this indicator assesses the motivation dimension of the AMO framework through managerial perceptions of staff behaviour.

Employee complaints* – this indicator assesses the incidence of employee complaints on a number of issues including access to part- and to full-time work, training, pressure to work additional or unsocial hours, discontent with pay levels, career development and health and safety practices, and discretion in using flexible working time systems. It taps into the motivation dimension of the AMO framework.

High absence and sickness rate rated as a problem by managers – this indicator assesses employee motivation through their willingness to attend work and may also pick up problems of burn-out and job strain.

Staff retention rated as a problem by managers – this indicator assesses employees' intention to remain with the organisation, which is likely to be reflected in their motivation to exert discretionary effort.

Joint efforts to solve problems* – this indicator assesses how effectively management and employee representatives work together and taps into the ability, opportunity and motivation dimensions of the AMO model. Employee representatives need to be offered the chance to contribute to decision-making, receive adequate information to have the ability to make a meaningful contribution and be motivated to do so by believing that their views will be taken seriously.

Hostile relationship between representatives – this indicator assesses the quality of the relationship between management and employee representatives. It may tap into all dimensions of the AMO model but does not do so explicitly. Responses must be treated cautiously, as other factors such as individual personalities and relationships between representatives also affect how well they work together.

Organisational outcome indicators

Labour productivity – this indicator assesses a key outcome of HPWP commonly used in much empirical research and to which all dimensions of the AMO model would make a cumulative contribution.

Change in productivity over time – this indicator assesses the direction of any change in productivity over the past three years. It may be helpful in picking up longer-term impacts of HPWPs and provides some limited insight support for some causality from HPWPs to better performance if organisations with higher levels of HPWPs report greater improvement.

Work climate – this indicator assesses the collective mood of the workplace and may tap into the motivation and opportunity elements of the AMO model. A harmonious organisational culture and climate is likely to be conducive to higher performance through improving employees' motivation. Communication between managers and social partners is likely to be easier if the work climate is favourable and this may improve opportunities to innovate and to solve problems.

Economic state of organisation – this indicator assesses the overall performance of each organisation, using terminology which can be interpreted flexibly so that managers can answer with reference to whichever financial indicators are most relevant to them. All dimensions of the AMO model should contribute to this indicator.

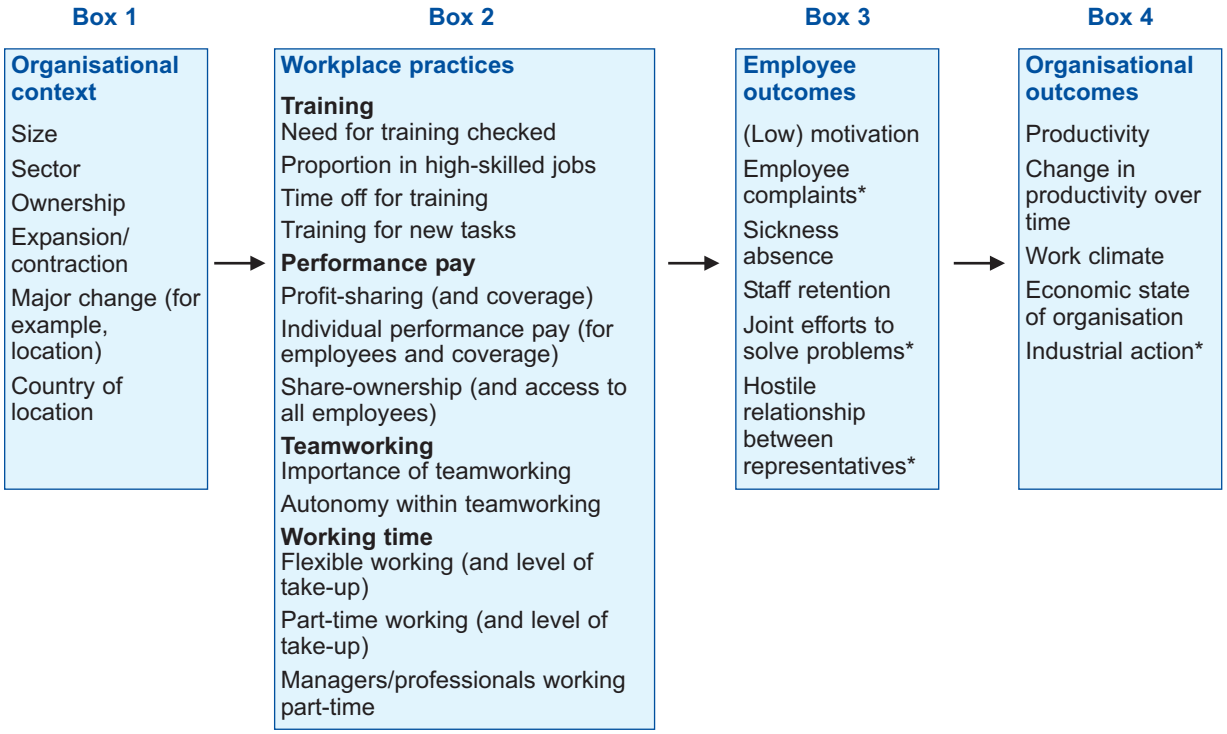
Industrial action* – this indicator assesses the incidence of strike action and refusal to do overtime as the most severe indicators of a breakdown of collective relationships between managers and workers. It taps into the motivation element of the AMO model because withdrawal of labour is the ultimate indicator of problems with worker motivation.

(*Assessed through the employee representative questionnaire.)

Conclusions – application of analytic framework

This chapter has outlined the theoretical underpinnings and framework that make the case for the connections between HPWPs and organisational performance and it has identified the questions for analysis from the ECS. The need to provide a suitable analytic framework to underpin the research has led us to use the AMO model (Appelbaum et al., 2000) because it is feasible to use it to make appropriate links between HPWPs and individual/organisational performance measures. Within the field of HPWP research, there is increasing emphasis on the need to develop a theory to support multilevel analysis that can accommodate and trace the connections between impact of practices on employees and impact of practices on organisations, using relevant measures for each (Paauwe, 2009). This is worth further consideration in future development of the ECS. The full analytical framework adopted for this report is shown in Figure 1.

Figure 1: *Theoretical framework for ECS analysis*



(*Assessed through the employee representative questionnaire.)

It should be noted that in many cases, the selection of practice measures is based on the availability of questions which are posed in the survey on their basis of seeking to cover each of the AMO dimensions. The range of question areas and content of questions is not necessarily those that might be suggested as most suitable by theory. Thus, for example, we do not address questions of recruitment and selection practices or performance appraisal techniques. The phrasing within the survey means that a number of the questions do not tell us whether the practices cover the entire workforce, such as training provision and teamworking, nor do they assess the quality of the practices and how well they are implemented. We return to these issues in making recommendations for future development of the survey in Chapter 4.

The theoretical relationship between each of these practices and performance outcomes is shown in Table 1.

Table 1: *Theoretical links between HPWPs and AMO model*

Name of practice	Theoretical link to AMO	Performance outcome affected
Training	Supports ability by providing workers with skills needed for job and motivation through satisfaction from firm investment	Employee absence, retention and motivation, absence of relevant employee complaints Productivity levels and change, financial state of organisation
Pay	Supports motivation by providing incentive and reward for high performance	Employee absence, retention and motivation, absence of relevant employee complaints Productivity levels and change, economic state of organisation
Teamworking	Supports the development of ability with opportunity of informal peer learning as well as sharing of tasks, motivation and opportunity by providing control over work if teams are autonomous, and reinforces motivation by generating more satisfying work through group collaboration	Employee absence, retention and motivation, joint efforts to solve problems (especially if teams are offline) Quality of work climate, productivity levels and change over time, economic state of organisation
Flexible working time	Supports motivation by enabling employees to reconcile demands of work and personal life	Employee absence, retention and motivation, absence of relevant employee complaints Productivity levels and change, economic state of organisation
Social dialogue	Supports ability, motivation and opportunity by informing employees about business context to enable them to contribute to decisions and offers opportunity for staff to voice their views, which may motivate them to do so	Employee absence, retention and motivation, reduced employee complaints, quality of relationship between management/employee representatives, joint efforts between managers/employees to solve problems Productivity levels and change, economic state of organisation, quality of work climate, incidence of industrial action

Hypotheses for analysis

The broad hypotheses which this analytic framework generates are:

Hypothesis 1 – each practice within the four dimensions of HPWPs selected for study has a positive, statistically significant and independent association with each of the employee outcome measures when features of the organisational context, such as the size of the establishment, are controlled for.

Hypothesis 2 – each practice within the four dimensions of HPWPs selected for study has a positive, statistically significant and independent association with each of the organisational outcome measures when features of the organisational context, such as the size of the establishment, are controlled for.

Hypothesis 3 – an index of all the HPWPs has a positive, statistically significant and independent association with each of the performance outcome measures when features of the organisational context, such as the size of the establishment, are controlled for.

The analysis will also test for variations in relationships between HPWPs and performance among higher- and lower-performing firms and among countries with different types of industrial relations regimes. However, this analysis is intended to be exploratory, so we do not propose hypotheses for it.

The review of the evidence also illustrates the dominance of cross-sectional studies in the literature on HPWP and raises a significant problem in the validity of conclusions made about impact, which will also be encountered in this study. Put simply, unless longitudinal surveys or case studies are used, it is not possible to determine whether high-performing firms have achieved superior outcomes due to use of HPWPs, or whether firms that are more sophisticated in their management approaches, and are already profitable, are able to afford to invest in costly HPWPs. It is also possible that working in a successful organisation improves job satisfaction and commitment as much as the implementation of HPWPs (Den Hartog and Verburg, 2004). This again gives rise to questions about the need to invest in longitudinal studies (Paauwe, 2009), which we return to in Chapter 4.

Findings from analysis 3

Introduction and structure

This chapter reports on the results of the multivariate analysis of the ECS 2009. It presents results in the following order:

- analysis of individual relationships between each workplace practice and each employee performance outcome, followed by analysis of relationship between an index of workplace practices and each outcome;
- analysis of individual relationships between each workplace practice and each organisational performance outcome, followed by analysis of relationship between an index of workplace practices and each outcome;
- analysis of the impact of the adoption of workplace practices comparing organisations with relatively high versus low performance outcomes;
- analysis of variations in the relationship between workplace practices and performance outcomes at national levels;
- validation of the results of the analysis by comparison of performance for each country against the KLEMS database.

Methodology

The relationships between HPWP and employee and organisational outcomes are estimated based on statistical models (which are logit, unless otherwise stated). These models estimate each individual relationship between one particular HPWP and particular employee outcomes within each model. We estimate different models for each of the 18 different dimensions of HPWPs and each of the outcome measures. An additional model estimates the relationship between the index of HPWP-particular outcomes. All logit models are estimated with robust standard errors. We tested for multicollinearity between the different variables used in the models using Cronbach's alpha, indicating that multicollinarity is not relevant for the set of control variables included in the logit models.

For employee outcomes, all dependent indicator measures are coded. A score of 1 indicates that managers report the company has a problem with employee outcomes of absenteeism, motivation or staff retention. A score of zero indicates that managers report no problems with these outcomes. For the survey of the employee representatives, employee complaints gain a score of 1 if a particular complaint has been made in the firm and a score of zero if no complaint has been made.

The control measures are included as additional independent indicators for the particular HPWP in the models (this uses a linear specification of the logits) and categorised into two alternate responses at firm level. The presence of each particular firm's characteristics scores 1 (dummy variables). This coding implies that the estimation of conditional logit models controlling for n dimensions (for example, for the 30 countries) can be achieved through n-1 control variables (such as 29 country dummies) and one omitted category, which is captured by the model if all 29 dummy variables show a value of zero. The list of control variables in Appendix A shows all control variables included in the model and the related omitted category. The control variable response selected as the default answer is chosen to represent the most frequent response to each of the context questions. All models control for firm characteristics as set out in the theoretical model in Figure 1, omitting the most frequent category in each of the dimensions of firm size, sector, foreign ownership, employment growth, change in circumstances, country and the share of female employees (the complete set of covariates can be found in Appendix A).

As employee representatives are present only in approximately 25% of the sample, items based on their responses have been excluded from some of the indices where this would cause problems for the statistical analysis.

How to interpret the results in the tables

The tables show the estimated coefficients of the relationships between HPWPs and employee outcomes. Note that these coefficients are relative to the logged odds ratio and do not show the change in probability, for example of a particular workplace practice in place with regards to the employee outcomes. It is of course possible to derive these marginal effects of workplace practices on employee outcomes (which can be interpreted as a ceteris paribus effect of adopting a specific practice), but since the analysis was primarily concerned with the identification of significant relationships and their direction, the reported beta coefficients are actually sufficient for this purpose. Since all variables (including the index) are coded between 0 and 1 (or 0 and 100% for the index), the coefficient can be compared across the different HPWPs. All results are significant at the 95% level unless otherwise stated.

Colour codes indicate whether the coefficients are statistically significant:

- green indicates a statistically significant link between an improved outcome and the use of HPWP;
- red indicates a statistically significant link between a worse outcome and use of HPWP;
- white indicates that there is no statistically significant relationship between a practice and outcome.

A minus sign (-) indicates a negative relationship between the practice and the outcome and no sign indicates a positive relationship. It is important to note that depending on the wording of the question, positive or negative relationships between practices and performance may suggest a link between the use of a HPWP and performance. For example, checking training periodically may be linked to a reduction in staff absence and this is shown by a minus sign. Readers may find using the colour coding helpful to understand where links may be beneficial. All these models include country dummies, which control for a different level in outcomes across countries, but do not model the relationship between HPWP and outcomes as a country-specific relationship. Country-specific differences in the relationship are captured in the final section of this analysis through models incorporating country-specific dummy variables interacted with particular HPWPs.

Readers who would like to see a quick summary of the results may like to read the summary boxes at the end of each section.

A note on causality

We must also remind readers of the need for caution in interpreting the findings. This report refrains from stating that HPWPs *cause* improved outcomes for firms but notes positive *associations* between HPWPs and a number of dimensions of a firm's performance. This is because we cannot be sure of the direction of causality in the relationship between improved performance and the adoption of HPWP due to use of cross-sectional data and the possible influence of other variables not captured within the survey. It is possible that HPWP causes firms to perform better, but it is equally plausible that high-performing firms may have greater resources, time and inclination to invest in implementing HPWPs; that is, reverse causality. This is a major issue widely acknowledged in the HPWP literature, which can be overcome only by using longitudinal, rather than cross-sectional, data. However, the current study, like the vast majority of research in this field, uses cross-sectional survey data and establishing the direction of causality remains problematic. The second problem in making statements about causality is the possibility that a 'third variable', not included in the regression, explains firms' adoption of HPWP and explains higher performance. To an extent, the inclusion of control variables (such as sectors or firm size) helps mitigate these problems, but it is unlikely that they can be completely eradicated.

Relationships between HPWPs and employee performance measures

Workplace practices, motivation and absence

Table 2 illustrates the relationship between each workplace practice and management reports of absenteeism, low staff motivation and staff retention for each individual practice.

Table 2: *Relationship between individual HPWPs and employee outcomes*

	Problem with absenteeism	Problem with employee motivation	Problem with staff retention
Need for training checked periodically	-0.12	-0.29	0.00
Proportion of high-skilled workforce more than 40%	-0.77	-0.35	0.04
Time off for training given	-0.02	-0.07	0.03
Training for new tasks	-0.04	-0.08	0.06
Any profit-sharing offered	-0.17	-0.10	-0.01
Profit-sharing offered to all	-0.16	-0.06	-0.04
Any performance pay outside top management	0.10	0.15	0.27
Individual performance pay for 25% +	-0.02	0.05	0.20
Any share-ownership offered	-0.16	-0.01	-0.02
Share-ownership offered to all	-0.10	-0.08	-0.10
Teamworking important characteristic	-0.02	-0.13	0.14
Team decides autonomously	-0.14	-0.27	-0.15
Flexible working possible	-0.10	-0.01	0.14
Flexible working time more than 20%	-0.38	-0.12	0.06
Part-time work more than 20%	0.18	0.15	0.27
Management and highly skilled staff working part time	0.02	0.13	0.18
Employee representation in place	0.22	0.11	-0.13
Ad hoc consultation in absence of employee representation	-0.01	0.00	0.12

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *ECS 2009*

There are a number of significant and positive links between the use of HPWPs and lower reports of high staff absence levels. Provision of profit-sharing and share-ownership schemes show significant statistical links with fewer problems of absenteeism, which is consistent with research evidence into the mechanisms by which group-based pay schemes yield improved organisational performance. However, only profit-sharing across all employees is a statistically significant predictor for this outcome. Two dimensions of flexible working are significantly and positively associated with fewer absence problems, including provision of flexible start and finish times each day, and at least 20% of staff using flexible working hours within each day. This is consistent with the evidence and theory that control over working hours should enable employees to balance their work and personal responsibilities and consequently improve attendance. Some aspects of training provision are positively and statistically significant for low absence levels, including monitoring of training needs and employing a higher proportion of skilled staff. The latter may be indicative of greater commitment to a profession or occupation as well as to higher staff commitment resulting from training. Teamworking is positively associated with fewer absence problems, but only if it is autonomous in nature. This suggests that practices designed to support ability and motivation have slightly stronger links to reduced absence than those designed to foster opportunity.

A number of practices are associated with managers not reporting low staff motivation as a problem, but there is sometimes variation in the consistency of results across different aspects of the same practice. For instance, all measures of training have significant positive associations with this outcome as do the measures of teamworking. This supports the AMO theory, which asserts connections between the principles of teamworking and the provision of training and employee motivation. However, the way in which flexible working hours is applied has an association with an absence of motivation problems, but its mere presence as a policy does not. At least 20% of staff need to be making use of flexible start and finish times for there to be a statistically significant association with no reports of employee motivation problems. The results for pay practices are more ambiguous. Share-ownership provision has no link to this performance outcome. The presence of profit-sharing has a positive association, but application of profit-sharing to all employees confers no added benefit.

Only two HPWPs, formal employee representation and autonomous teamworking, are associated with reduced problems of staff retention. This is likely to reflect multiple external influences on employee decisions to remain with or leave an employer, and therefore less scope for the influence of HPWPs. Curiously, training practices and group-based pay systems intended to build employee commitment and flexible working, and which might provide a motive to remain with an employer from personal convenience, show no links with this outcome.

The presence of performance pay for non-managerial staff and more than 20% of staff working part time shows significant negative associations with all three employee outcome indicators. Individual incentive pay is noted as a controversial HPWP in the literature and, as an extrinsic incentive, may not fit well with policies intended to generate intrinsic commitment. Significant proportions of staff working part time as a variable may be acting as a proxy measure of some other invisible characteristic of the organisations concerned. In particular, the ECS does not capture whether part-time working is chosen voluntarily by employees or imposed by managers, which is likely to make a big difference to how it is viewed by workers. The presence of formal employee representation also shows an adverse relationship with employee absence and staff motivation and is associated with higher levels of reported problems with these outcomes.

Quick summary of results: which practices may be helpful in relation to employee absence, retention and motivation?

Practices that are associated with good performance outcomes

Practices with beneficial links to **reducing employee absence levels are** reviews of staff training needs, (extensive) profit-sharing, share-ownership, autonomous teamworking, presence of flexible working and take-up by at least a fifth of employees.

Practices with beneficial links to **reducing employee motivation problems are** reviews of staff training needs, giving staff training for new tasks and time off for training, profit-sharing, presence of teamworking and autonomous teamworking, take-up of flexible working by at least a fifth of employees.

Practices with beneficial links to **reducing employee retention problems are** autonomous teamworking and formal employee representation.

Practices that are associated with poor performance outcomes

High levels of part-time working and use of performance pay for workers outside top managers are linked to managers reporting problems of employee absence, employee motivation and employee retention.

Workplace practices and employee complaints

The analysis produced very few positive and statistically significant associations between any workplace practices and a variety of types of employee complaints, and therefore the data is displayed in Appendix B. Autonomous teamworking was associated with a lower incidence of complaints concerning increased overtime without consultation, which is consistent both with the possibility that members of autonomous teams may be more likely to be involved in decisions about working time and also with the possibility that organisations making use of teamworking may have fewer requirements for overtime due to cross-training and multiskilling of staff and the adoption of continuous shift systems. Having at least 20% of the workforce on part-time contracts is associated with fewer problems of night workers or shift workers not being able to get a day job – the provision of higher levels of part-time working may indicate greater flexibility on the part of managers in accommodating staff working time preferences. A higher density of part-time workers is also associated with fewer complaints about problems of access to training.

There are also some consistent adverse relationships between HPWPs and employee complaints which are evident in the data. Provision of training for new tasks and time off for training, together with at least 40% of staff being highly skilled, are HPWPs that are positively and significantly associated with discontent with career development possibilities and complaints about rejected requests for training. This is consistent with the possibility that provision of training may:

- raise awareness of other areas of skills development from which staff believe they would benefit;
- stimulate a desire among staff to acquire more skills;
- lead to higher expectations about further training and career development.

Higher-skilled workers are also more likely to have a positive orientation towards learning and be more demanding in their expectations of the employer. Provision of training for new tasks and time off for training are factors positively associated with complaints about pay. This is consistent with unmet employee expectations about increased remuneration as a reward for learning new skills. These negative associations, therefore, should not lead to the conclusion that the provision of training is undesirable or in any way inconsistent with the principles of HPWP; rather, it points to the need for organisations to consider how they can best manage employees' expectations.

A number of flexible working practices are associated with higher levels of discontent about career development possibilities. These practices include the provision of flexible working hours; at least 20% of staff making use of flexible working and part-time working; and managerial staff working part time. These results may reflect the nature of work, types of jobs and organisational structures in firms that operate these policies and, in particular, discontent among staff who work non-standard hours about these issues. There are longstanding policy concerns about equal access to promotion for staff who work flexible hours or part time.

Quick summary of results: which practices may be helpful in relation to reducing employee complaints?

Practices that are associated with good performance outcomes

Practices with beneficial links to complaints about increased overtime without being consulted are autonomous teamworking.

Practices with beneficial links to complaints about night workers or shift workers not getting a day job are having at least 20% of the workforce on part-time contracts.

Practices with beneficial links to complaints about access to training are at least 20% of the workforce being part time.

Practices that are associated with poor performance outcomes

Provision of training for new tasks and time off for training, together with at least 40% of staff being highly skilled, are linked to reports of discontent with career development possibilities and complaints about rejected requests for training. This is likely to be because provision of training for higher-skilled workers may raise expectations and desires for further development.

Provision of training for new tasks and time off for training are linked to higher reports of complaints about pay. This may be because employees seek higher earnings to reward them for undertaking training and possibly taking on new or additional tasks.

Provision of flexible working hours, at least 20% of staff making use of flexible working and part-time working, and managerial staff working part time are associated with higher levels of discontent about career development possibilities.

Workplace practices and manager/employee representative relations

Table 3: *Relationship between HPWPs and relationship-based outcomes*

	Management and employee representation make sincere efforts to solve problems	The relationship between management and employee representation is hostile
Need for training checked periodically	0.22	-0.11
Proportion of high-skilled workforce more than 40%	0.11	-0.06
Time off for training given	-0.06	-0.09
Training for new tasks	-0.04	-0.10
Any profit-sharing offered	0.09	0.00
Profit-sharing offered to all	0.03	-0.02
Any performance pay outside top management	0.10	-0.13
Individual performance pay for 25% +	0.01	-0.19
Any share-ownership offered	0.34	-0.35
Share-ownership offered to all	0.24	-0.13
Teamworking important characteristic	0.18	-0.04
Team decides autonomously	0.09	-0.16
Flexible working possible	0.09	-0.20
Flexible working time more than 20%	0.00	-0.29
Part-time work more than 20%	-0.03	-0.21
Management and highly skilled staff working part time	-0.08	-0.12
Employee representation in place		
Ad hoc consultation in absence of employee representation		

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

There was no positive significant relationship produced for individual practices and joint effort to solve common problems. Negative relationships were found between regular assessment of employees' training needs, provision of share-ownership and this outcome.

The only positive significant relationships between individual practices and the quality of management/employee representative relationships were where flexible working time was implemented and used by at least 20% of employees. This may indicate that the ability to accommodate and balance work and personal life may be associated with less strained relationships in the workplace.

Quick summary of results: which practices may be helpful in relation to management–employee relationships?

Practices that are associated with good performance outcomes

Practices with beneficial links to improving management–employee relationships are presence of flexible working time, use of flexible working by at least 20% of employees.

Practices that are associated with poor performance outcomes

Practices with adverse links to improving management–employee relationships are regular assessment of employees' training needs, provision of share-ownership.

Workplace practices and employee outcomes

Method of index creation

Following MacDuffie (1995), the different HPWPs were added together to create an index to assess the relationship of combinations of practices to employee outcomes. In order to construct the index, the different variables were first standardised by subtracting the mean value from each individual firm's value for each variable and dividing by the standard deviation. In consequence, the variables are normalised to a mean of zero and a standard deviation of one. We did not assign particular weights to any of the dimensions included in the index measure and created an additive index of all HPWPs. As in MacDuffie (1995) this index was then simplified in a linear transformation. The firm with the highest index (that is, the most extensive implementation of HPWP) obtained a value of 1 (or 100%) and the index with the lowest use of HPWP was coded zero. More detail of the descriptive analysis is provided in Appendix A.

Results

This analysis showed that the greater the number of HPWPs used, the more positive the employee outcomes found across a range of performance measures, as shown in Table 4.

Table 4: *Relationships between index of HPWPs and employee outcomes*

	Problem with absenteeism	Problem with employee motivation	Employee outcome staff retention problem	Management and employee representation make sincere efforts to solve problems	The relationship between management and employee representation is hostile
Index of all workplace practices	-0.75	-0.53	0.59	0.43	-1.32

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

Quick summary of results: do combinations of HPWPs have links to improved employee outcomes?

Beneficial links were found between the number of workplace practices used and lower problems of employee absence, lower reports of employee motivation and a better quality of relationship between employee and management representatives. Combinations of multiple HPWPs appear to have positive links to indicators of employee performance.

Positive statistical associations were found between the number of workplace practices used and fewer problems of employee absence, fewer reports of employee motivation and a better quality of relationship between representatives. This is a relatively striking finding, which lends further partial support to the body of evidence that claims positive links between bundles of HPWP and employee performance outcomes. It is also consistent with a universalistic approach to the construction of bundles of HPWPs, which implies the more practices implemented, the better the outcomes. As configurational constructions of bundles have not been tested within this analysis, we cannot claim that the universalistic approach is superior. There is no relation between the index of HPWPs and employee retention, which is likely to reflect a series of external factors and personal circumstances which determine labour turnover and which are less amenable to influence by HRM practices.

Relationships between HPWPs and organisational performance measures

Method

Models estimating the relationship between HPWPs and organisational outcomes use separate models to control for firm characteristics and other important characteristics (for example, country of location). It is important to note that these organisational outcomes are entirely qualitative in that they rely on a performance judgement rather than hard data. The underlying question ranks firms in their sector. This information, like the other dimensions of organisational performance covered in this study, was recoded into dummy variables for the firms indicating a value of one if firms rated themselves as above average for particular outcomes.

All models control for organisational characteristics and include country variables, but do not estimate country-specific impacts of the different HPWPs on organisational outcomes, which are considered in the final section.

The relationships between individual workplace practices and organisational outcomes are shown in Table 5.

Table 5: *Relationships between workplace practices and organisational outcomes*

	Findings from the management questionnaire				Findings from employee representative questionnaire
	Higher-than-average productivity	Increased productivity over last three years	Good work climate	Economic situation of firm good	Industrial action over the last year
Need for training checked periodically	0.44	0.46	0.29	0.34	0.02
Proportion of high-skilled workforce more than 40%	0.28	0.18	0.22	0.13	0.03
Time off for training given	0.23	0.33	0.09	0.11	-0.07
Training for new tasks	0.24	0.36	0.10	0.12	-0.03
Any profit-sharing offered	0.33	0.15	0.05	0.18	-0.10
Profit-sharing offered to all	0.31	0.09	0.09	0.15	-0.13
Any performance pay outside top management	0.32	0.37	-0.03	0.17	0.05
Individual performance pay for 25% +	0.28	0.26	0.06	0.23	0.10
Any share-ownership offered	0.19	0.01	0.04	0.18	0.00
Share-ownership offered to all	0.20	0.06	0.11	0.28	-0.08
Teamworking important characteristic	0.45	0.44	0.20	0.12	-0.12
Team decides autonomously	0.26	0.24	0.17	0.10	0.17
Flexible working possible	0.15	0.14	0.00	0.00	0.05
Flexible working time more than 20%	0.19	0.10	0.04	0.02	0.04
Part-time work more than 20%	0.01	-0.09	-0.06	0.02	0.09
Management and highly skilled staff working part time	-0.11	0.00	-0.14	-0.14	0.04
Employee representation in place	-0.06	0.10	-0.23	-0.16	(Linear combination)
Ad hoc consultation in absence of employee representation	0.19	0.12	0.26	0.16	

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

Workplace practices and higher-than-average productivity

The majority of workplace practices are significantly and positively associated with management reports of above-average productivity, including all training, performance pay and team working practices. The results for working time and social dialogue practices are mixed. With regards to working time, there is some difference between the results for flexible working time practices and part-time working, with the former having significant positive links with productivity, but the latter having non-significant or negative relationships with productivity. Similarly, the two forms of social dialogue have contrasting relationships with this performance measure. Formal employee representation does not have a significant relationship with above-average productivity, while the use of ad hoc consultation in the absence of formal employee representation has a positive association.

Workplace practices and increased productivity

The relationships between workplace practices and firms reporting increased productivity in the last three years is more ambiguous. Training, teamwork and social dialogue practices are all significantly positively related to increases in productivity. However, the results of the pay elements of HPWPs are mixed. The presence of individual performance pay and coverage of at least 25% of employees are both positively associated with increased productivity. However, only the presence, rather than coverage, of profit-sharing for all employees has a positive relationship with this outcome, and no measure of share-ownership is significantly related to productivity increases. This is slightly counter-intuitive, as where there is a positive relationship between an outcome and a practice, extending the practice to a larger proportion of the workplace should enhance its effect. It should be noted that this unexpected pattern also manifests itself in performance pay – the size of coefficient for presence of any performance pay is larger than that for individual performance pay covering more than 25% of employees, indicating a stronger relationship between the former and productivity increases.

For working time practices, there is again a division between flexible working and part-time work. The incidence of flexible working and use by at least 20% of staff is positively associated with increases in productivity, while having more than 20% of staff working part time is negatively associated with this outcome. There is no significant association between this performance measure and having management and high-skilled staff working part time.

Workplace practices and good work climate

The pattern of relationships between workplace practices and a good work climate is less clear. All training practices and all teamwork practices again have significant positive relationships with a good work climate, although a number of the coefficients are smaller than for other organisational performance outcomes, indicating weaker relationships. None of the pay practices has a significant relationship with the presence of a good work climate. Among working time practices, the only significant association is with management and high-skilled staff working part time, which is negatively related to working climate. There are no significant relationships between flexible working and working climate. Finally, social dialogue practices again exhibit a split between formal representation and ad hoc consultation. Ad hoc consultation is positively associated with a good work climate and formal representation has a negative relationship with this outcome.

Workplace practices and firm's financial situation

The relationships between workplace practices and a good financial situation of the firm are broadly similar to the pattern of relationships between HPWPs and above-average labour productivity. Training practices, pay practices and teamworking all exhibit positive associations with the financial situation of the firm, though in general, the coefficients are somewhat smaller than for higher-than-average productivity, which suggests the practices have a stronger association with higher productivity than a good economic situation. Social dialogue practices have slightly different relationships to those they have with productivity; ad hoc consultation is positively associated with financial situation, but formal employee representation now has a negative association. The major difference between the results of the relationship between HPWPs and the financial situation of the firm versus HPWPs and productivity level is that flexible working practices are not significantly related to the financial situation.

Workplace practices and industrial action

None of the individual practices has a significant relationship with the incidence of industrial action over the last year. This may be the result of selection effects, because only around 25% of firms are covered by the employee representative questionnaire.

Quick summary of results: which workplace practices may be helpful in relation to improved organisational performance outcomes?

Practices that are associated with good performance outcomes

Practices with beneficial links to **above-average productivity** are all training, performance pay and teamworking practices, all flexible working practices and ad hoc consultation where there is no formal employee representation.

Practices with beneficial links to **improved productivity over the past three years** are training, teamwork and social dialogue practices, all flexible working practices, the presence of profit-sharing and the presence and coverage of individual incentive pay for at least 25% of employees.

Practices with beneficial links to a **good work climate** are all training practices and all teamwork practices, ad hoc consultation where there is no formal employee representation.

Practices with beneficial links to a **good economic situation** of the firm are all training practices, all pay practices and all teamworking practices, ad hoc consultation where there is no formal employee representation.

Practices that are associated with poor performance outcomes

Practices with adverse links to organisational outcomes are presence of managers/supervisors working part time, which has adverse links to higher-than-average productivity, a good work climate and a good economic situation, formal employee representation, which has adverse links to a good work-climate and a good economic situation. This may partly reflect the role of social partners in providing channels for articulation and discussion of workplace problems.

Employee practices and organisational outcomes

The relationship between the index of employee practices and organisational outcomes is shown in Table 6 and shows a range of positive and significant results.

Table 6: *Relationship between index of employee practices and organisational outcomes*

	Findings from the management questionnaire				Findings from the ER questionnaire
	Higher-than-average productivity	Increased productivity over last three years	Good work climate	Economic situation of firm good	Industrial action over the last year
Index of all workplace practices	1.95	1.75	0.55	0.89	-0.37

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *ECS 2009*

Quick summary of results: do combinations of HPWPs have links to improved organisational outcomes?

Combinations of multiple HPWPs appear to have positive links to improved organisational performance. Beneficial links were found between the number of workplace practices used and higher-than-average productivity, improved productivity over the past three years, a good work climate, a good economic situation for the organisation and no industrial action in the past year.

The index of all workplace practices is positively associated with high current productivity, increases in productivity, a good work climate and the economic situation of the firm being good. It is also negatively associated with incidences of industrial action. This could imply, if such a link were causal, that the more practices a firm adopts, the greater the benefit to the firm. The index has a stronger effect overall than any of the individual workplace practices. This reflects even stronger support for the concept of bundling HPWPs than was found in the relationship between the index of practices and employee outcomes. In particular, unlike the individual practices, the index has a significant association with the organisational outcome of incidence of industrial action. This lends some support to the notion that the 'additive' approach of combining practices is an effective way to use HPWPs. However, it should also be noted that due to the open and exploratory methodological approach, we do not attempt to use more theoretically sophisticated indices such as those found elsewhere in the literature. Consequently we cannot assert whether different combinations of workplace practice are more effective than a simple additive approach.

There is some similarity in this analysis of links between workplace practices and performance and previous analysis of the ECS. A similar study of some of the workplace practices analysed in this report showed that incentive pay, training practices and autonomous teamworking were associated with a variety of performance outcomes, but no evidence of positive links between bundles of practices and performance outcomes (Jungblut, 2010) was found. However, this piece of research focused on a smaller range of practices compared to the current report and also adopted a much stricter definition of HPWPs, for example measuring kinds of workers who received training rather than simply the provision of training. It is striking that both teamworking and training activity are confirmed to have beneficial links with performance, and also suggests that modelling the detail of incentive pay schemes may be important in identifying links with performance outcomes.

HPWPs and organisational outcomes in firms of different sizes

Tables 7 and 8 separate the sample of firms into those with fewer than 250 staff (Table 7) and those with 250 or more staff (Table 8). Each table shows the relationships between HPWPs and organisational performance outcomes for each size band.

Table 7: *Relationship between HPWPs and organisational outcomes in SMEs*

	Higher-than-average productivity	Increased productivity over last three years	Good work climate	Economic situation of firm good	Industrial action over the last year
Need for training checked periodically	0.43	0.45	0.27	0.34	-0.02
Proportion of high-skilled workforce more than 40%	0.28	0.23	0.23	0.12	-0.06
Time off for training given	0.22	0.32	0.10	0.12	-0.11
Training for new tasks	0.25	0.36	0.11	0.14	-0.10
Any profit-sharing offered	0.35	0.16	0.07	0.22	-0.22
Profit-sharing offered to all	0.32	0.07	0.11	0.22	-0.38
Any performance pay outside top management	0.33	0.39	-0.03	0.18	0.04
Individual performance pay for 25% +	0.29	0.28	0.06	0.25	0.10
Any share-ownership offered	0.18	0.02	-0.01	0.21	-0.31
Share-ownership offered to all	0.20	0.03	0.08	0.40	-0.63
Teamworking important characteristic	0.46	0.43	0.21	0.12	-0.15
Team decides autonomously	0.24	0.24	0.19	0.10	0.14
Flexible working possible	0.18	0.13	-0.01	0.02	-0.04
Flexible working time more than 20%	0.20	0.12	0.03	0.04	-0.09
Part-time work more than 20%	0.01	-0.08	-0.11	0.02	0.19
Management and highly skilled staff working part time	-0.06	-0.03	-0.16	-0.14	-0.10
Employee representation in place	-0.04	0.08	-0.21	-0.14	-0.38
Ad hoc consultation in absence of employee representation	0.20	0.15	0.22	0.15	-0.75
Index	2.06	1.83	0.59	1.08	-0.49

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

Table 8: *Relationship between HPWPs and organisational outcomes in firms with at least 250 staff*

	Higher-than-average productivity	Increased productivity over last three years	Good work climate	Economic situation of firm good	Industrial action over the last year
Need for training checked periodically	0.40	0.44	0.45	0.28	-0.09
Proportion of high-skilled workforce more than 40%	0.31	0.00	0.17	0.19	0.21
Time off for training given	0.26	0.33	0.01	0.06	0.01
Training for new tasks	0.17	0.30	0.03	0.01	0.15
Any profit-sharing offered	0.21	0.02	0.00	0.08	-0.04
Profit-sharing offered to all	0.21	0.02	0.03	-0.01	0.05
Any performance pay outside top management	0.23	0.26	-0.03	0.14	-0.04
Individual performance pay for 25% +	0.21	0.14	0.02	0.15	-0.02
Any share-ownership offered	0.20	-0.10	0.10	0.12	0.23
Share-ownership offered to all	0.18	0.00	0.11	0.02	0.22
Teamworking important characteristic	0.34	0.39	0.08	0.12	-0.12
Team decides autonomously	035	0.25	0.05	0.01	0.13
Flexible working possible	0.07	0.23	0.15	-0.04	0.26
Flexible working time more than 20%	0.12	0.00	0.11	-0.04	0.29
Part-time work more than 20%	0.01	-0.09	0.12	0.05	-0.05
Management and highly skilled staff working part time	-0.16	0.14	-0.03	0.00	0.21
Employee representation in place	-0.34	0.16	-0.36	-0.32	-0.50
Ad hoc consultation in absence of employee representation	0.11	-0.15	0.44	0.15	-0.50
Index	1.34	1.13	0.54	0.29	0.71

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

These results show a more widespread set of associations between HPWPs and organisational performance outcomes in SMEs, than in larger firms. There were links across a greater range of HPWPs and work climate and the economic situation of the organisation in smaller firms. There are several likely explanations for this. Work climate may be less amenable to influence by HPWPs in larger organisations, and the economic situation of larger organisations may be affected by a wider range of variables. In SMEs the contribution of each staff member has greater relative impact than in large firms, so the potential relationships between use of HPWPs and performance outcomes may be more important. This could raise important questions about appropriate policy support for diffusion of HPWPs in small firms.

Negative associations between presence and take-up of part-time working and performance outcomes may be explained by the degree of choice exercised by employees over their working time. In particular, the ECS does not capture whether part-time working is chosen voluntarily by employees or imposed by managers, which is likely to make a big difference to how it is viewed by workers.

Relationship between employee outcomes and organisational outcomes

Some of the previous empirical studies examine either the relationships between HPWPs and employee outcomes (for example, Boxall and Macky, 2009) or the relationships between HPWPs and organisational performance (Huselid, 1995) and, more unusually, the relationships between HPWPs and both levels of outcome (Wright et al., 2003). Here we seek to assess whether there is any association between positive employee outcomes and positive organisational outcomes, to gauge whether HPWPs may be linked directly to organisational performance through changing the operational delivery of products and services, or whether HPWPs may be linked to organisational performance through employee performance.

Method

The next set of results tests the relationship between employee outcomes and organisational outcomes in a series of logit regression models, controlling for the other organisational variables.

Description of findings

Table 9 shows the relationships between employee outcomes and organisational outcomes. There is, overall, some consistent evidence that negative employee outcomes are associated with negative organisational outcomes.

Table 9: *Relationship between employee outcomes and organisational outcomes*

	Higher-than-average productivity	Increased productivity over last three years	Good work climate	Economic situation of firm good	Industrial action over the last year
Employee outcome low motivation	-0.53	-0.38	-1.32	-0.71	0.30
Employee outcome high absenteeism	-0.36	-0.25	-0.61	-0.37	0.27
Employee outcome retention problem	-0.22	-0.15	-0.68	-0.45	-0.13
Full-time workers desiring but not getting a part-time job	0.02	0.03	-0.04	-0.01	0.35
Night or shift workers desiring but not getting a day job	0.15	0.01	-0.18	-0.28	0.37
Increased overtime without much consultation	0.05	-0.03	-0.14	-0.18	0.49
Too much weekend work	0.08	0.05	-0.19	-0.14	0.31
Discontent related to pay levels or pay systems	-0.10	0.00	-0.39	-0.19	0.54
Rejected requests for further education or training	-0.10	-0.04	-0.14	-0.16	0.45
Discontent with career development possibilities	-0.12	-0.02	-0.21	-0.09	0.60
Bad social climate in teams, working groups or departments	-0.22	-0.05	-0.48	-0.20	0.61
Discontent with the health and safety situation	-0.14	0.04	-0.27	-0.29	0.59
Discontent regarding the discretion about when to work and when not to	-0.11	0.11	-0.18	-0.14	0.53
Management and employee representation make sincere efforts to solve common problems	0.29	0.08	0.41	0.19	-0.53
The relationship between management and employee representation is hostile	-0.37	-0.07	-0.33	-0.14	0.38

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *ECS 2009*

Employee outcomes and higher-than-average productivity

Most of the findings indicate a consistent association between adverse employee outcomes and adverse organisational outcomes, showing a potential performance link between employee outcomes and organisational outcomes, which is supportive of AMO models and theoretical explanations for HPWP impact. However, we have to note that many of the employee outcomes are reported by managers, so we may expect greater consistency in responses than from questionnaires where employee and employer data is matched. Low motivation, high absenteeism and retention problems are all negatively associated with higher-than-average productivity. Of these, the strongest relationship is between low motivation and productivity.

Most of the employee complaints and concerns do not have significant associations with high productivity. However, a bad social climate in teams or departments, discontent with the health and safety situation and hostile relations between management and employee representatives all have negative relationships with higher-than-average productivity. Management and employee representatives making sincere efforts to solve common problems are positively associated with higher productivity. A more anomalous result is the positive association between productivity and a high level of complaints from night workers who cannot get day jobs.

Relationship between employee outcomes and increases in productivity

For this measure we again find a negative association with problems of low motivation, high absenteeism and staff retention. It is notable that the coefficient sizes are all reduced compared to those for the employee outcomes and higher-than-average productivity.

There are even fewer significant relationships between increased productivity and employee complaints and concerns. Only the incidence of managers and employee representatives making sincere efforts to solve common problems has a significant positive association with increases in productivity, and this coefficient is notably smaller than that for the same employee outcome and higher-than-average productivity.

Relationship between employee outcomes and a good work climate

Low motivation, high absenteeism and retention problems are negatively related to a good work climate. The coefficients for this measure are among the largest overall, indicating a stronger relationship. The coefficient for motivation is particularly high.

There are also a greater number of significant associations between good work climate and employee complaints and concerns. Discontent related to pay levels or systems, career development opportunities and the health and safety situation, bad social climate in teams and a hostile relationship between management and employee representatives are significantly negatively associated with a good work climate. As we might expect, the strongest negative relationship is between a good work climate and a bad social climate in teams. Efforts by managers and employee representatives to solve common problems are again positively related to the organisational outcome variable.

Relationship between employee outcomes and good economic situation of the firm

Problems of low motivation, high absenteeism and staff retention are all negatively related to a good economic situation for a firm. There are a number of significant relationships between a good economic situation and employee complaints and concerns. Complaints about night workers not getting a day job, increases in overtime without consultation and rejected requests for training, discontent over pay levels or systems and health and safety and a bad social climate in teams are all negatively related to a good economic situation of the firm. Finally, the incidence of managers and employee representatives making sincere efforts to solve common problems is again positively associated with the organisational outcomes.

Relationship between employee outcomes and industrial action over the last year

Industrial action in the last year is the only organisational outcome to be taken from the employee representative questionnaire. Interestingly, it is the only organisational outcome variable that has no significant relationship with employee retention problems. Industrial action in the last year is significantly associated with all other adverse employee outcome variables. The direction of these relationships follows the expected pattern – all are positively associated with incidences of industrial action, with the exception of management and employee representative efforts to solve common problems, which is negatively associated with industrial action.

Quick summary of results: is there any link between employee outcomes and organisational performance outcomes?

The following poor employee outcomes are associated with poor organisational outcomes: problems of low motivation, high absenteeism and retention are all *negatively* associated with higher-than-average productivity and improved productivity in recent years, a good work climate and a good economic situation. This is consistent with a lack of worker effort affecting productivity. Low motivation and high absenteeism are also associated with incidence of industrial action in the last year.

A bad social climate in teams or departments, discontent with the health and safety situation and hostile relations between management and employee representatives all have *negative* relationships with higher-than-average productivity.

Discontent related to pay levels or systems, career development opportunities and the health and safety situation, bad social climate in teams and a hostile relationship between management and employee representatives are all *negatively* associated with a good work climate.

Complaints about night workers not getting a day job, increases in overtime without consultation and rejected requests for training, discontent over pay levels or systems and health and safety and a bad social climate in teams are all negatively related to a good economic situation of the firm.

Industrial action in the last year is significantly associated with all adverse employee outcomes except staff retention problems.

The following good employee outcomes are associated with good organisational outcomes: the incidences of management and employee representatives making sincere efforts to solve common problems is positively associated with all organisational outcomes including higher productivity and improved productivity in recent years, a good work climate, a good economic situation and absence of industrial action in the past year.

These results show that HPWPs may achieve their effects on organisational performance through improving employees' performance, rather than simply acting directly on operational and organisational outcomes. They provide evidence to emphasise the contribution employees may make to organisational performance and add weight to the case for firms to invest in appropriate HPWPs.

Relationship between index of employee outcomes and organisational outcomes

An index was created aggregating all employee outcome variables and estimating the impact of all dimensions of employee performance against organisational outcome variables to see whether combined effects are present.

The index was created in a similar way to the index of HPWPs: it first standardises the different dimensions of employee outcomes before it aggregates the three different employee outcomes obtained from the management questionnaire. Employee outcomes are coded as dummies, with a value of one indicating a particularly 'low performance' (or the existence of a problem), while the organisational outcomes are coded as dummies with one indicating a 'high performance'. In order to show the 'best' performers coherently, the linear transformation created an index of 1 if none of the different problems existed in the firms and of zero for firms that reported problems for all three employee outcomes of staff retention, staff motivation and absenteeism. Industrial action in the previous year is excluded from this analysis because the indicator is only available for a subset of firms with an employee representative.

The index of employee outcomes combines the three employee outcome measures from the management questionnaire. A high score on the index implies fewer employee problems and a more positive work situation.

Table 10: *Relationship between index of employee outcomes and organisational outcomes*

Effect of index employment outcomes on organisational outcomes – management questionnaire			
	beta	S.E.	z-stat
Higher-than-average productivity	0.87	0.06	14.91
Increased productivity over last three years	0.61	0.06	10.63
Good work climate	2.05	0.07	29.79
Economic situation of firm good	1.18	0.06	19.40

Source: *ECS 2009*

Quick summary of results: do combinations of employee outcomes have links to improved organisational outcomes?

Combinations of employee outcomes appear to have positive links to improved organisational performance. Beneficial links were found between positive employee outcomes and higher-than-average productivity, improved productivity over the past three years, a good work climate, and a good economic situation for the organisation.

As expected, all relationships are significant and positive. In essence, this means positive employee outcomes are associated with positive organisational outcomes. The relationship is particularly strong between the index and good work climate. This is explicable because a good work climate is unlikely where staff have low motivation and are often absent. It is also consistent with the previous results which showed strong relationships between a good work climate and the individual employee outcomes. The association between the employee outcome index and organisational performance measures is least strong for the two productivity measures, particularly productivity improvements in the last three years.

Relationship between HPWP and organisational outcomes for high- and low-performing firms

It is helpful to identify whether high- and low-performing firms may potentially benefit from different types of HPWP or whether HPWPs are associated with high levels of performance in both types of organisation. This could potentially indicate to lower-performing firms which types of HPWP they may benefit most from adopting.

Method – identifying high- and low-performing firms

The ECS does not contain indicators of organisational performance in a universally standardised measure, for example productivity, as value added per employee or per working hour. Organisational outcomes covered in the survey consist

of managerial judgement of performance. Their ratings for each of the performance measures were combined into an index, which can show high and low performance for all four performance measures included in the survey.

Firms are categorised according to an index of their performance outcomes and these groupings are used to estimate the relationship between use of different HPWPs by firms scoring in the top 25% of performance outcomes and those scoring in the bottom 25% of performance outcomes. More details about the analysis are provided in Appendix A. The models estimate the effect of the different HPWPs (and the index aggregating HPWPs) on performance outcomes. The analysis includes all control variables, but the tables only summarise the effects of the HPWPs or the index of HPWPs.

Results

Table 11 shows the relationship between use of HPWPs for high- and low-performing firms and indicates a trend of broadly positive relationships for firms at all levels of performance.

Table 11: *Relationship between use of HPWPs for high- and low-performing firms*

Effects of workplace practices on index of organisational outcomes				
	Performance index			
	Effects lower quartile		Effects upper quartile	
	beta	S.E.	beta	S.E.
Need for training checked periodically	0.0798	0.0054	0.0653	0.0000
Proportion of high-skilled workforce more than 40%	0.0430	0.0053	0.0002	0.0000
Time off for training given	0.0332	0.0039	0.0003	0.0000
Training for new tasks	0.0377	0.0045	0.0004	0.0000
Any profit-sharing offered	0.0349	0.0055	0.0003	0.0000
Profit-sharing offered to all	0.0350	0.0069	0.0001	0.0000
Any performance pay outside top management	0.0345	0.0041	0.0006	0.0001
Individual performance pay for 25% +	0.0325	0.0041	0.0005	0.0000
Any share-ownership offered	0.0319	0.0083	0.0000	0.0000
Share-ownership offered to all	0.0422	0.0097	0.0001	0.0000
Teamworking important characteristic	0.0643	0.0063	0.0009	0.0000
Team decides autonomously	0.0290	0.0055	0.0003	0.0000
Flexible working possible	0.0054	0.0042	0.0001	0.0000
Flexible working time more than 20%	0.0068	0.0039	0.0001	0.0000
Part-time work more than 20%	-0.0062	0.0048	0.0000	0.0000
Management and highly skilled staff working part time	-0.0105	0.0050	-0.0002	0.0000
Employee representation in place	-0.0133	0.0035	0.0000	0.0000
Ad hoc consultation in absence of employee representation	0.0337	0.0052	0.0002	0.0000
Index of all workplace practices	0.2723	0.0205	0.1750	0.0112

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

These results show that the adoption of most HPWPs has a significant and positive relationship for both the highest-performing and the lowest-performing firms. There are some differences. For flexible working practices, there is no link to performance in poorer-performing firms, while in contrast, the use of share-ownership has no statistically significant link with performance in higher-performing organisations. The presence of employee representation is only positively associated with performance in higher performing firms. This may be because employee representation mechanisms in poorer-performing firms have to confront more difficult issues and decisions than in more successful organisations. Use of part-time working for at least 20% of staff has no links to performance in either type of organisation and use of part-time working contracts by senior staff is negatively associated with performance for both types of organisations. This may reflect the structural or industrial characteristics of firms that employ part-time staff in senior roles, rather than the effects of a management decision to use this practice. It may also be explained by the degree of choice exercised by employees over their working time. In particular, the ECS does not capture whether part-time working is chosen voluntarily by employees or imposed by managers, which is likely to make a big difference to how it is viewed by workers.

There is a striking difference, though, between the size of the effects in poorer- and better-performing firms. There is a much stronger positive link between the adoption of HPWPs and improved performance outcomes in poorer-performing firms. This would suggest, if such a link were causal, that poorer-performing firms may stand to gain greater benefits from the application of HPWPs. This also applies to the results for the index of all workplace practices shown in the last row of Table 14. Here there is an association between higher levels of use of HPWPs and organisational outcomes for both high performers and low performers, but the effects are stronger for poorer performers.

Quick summary of results: do HPWPs and combinations of them have different links to organisational outcomes in high-performing and low-performing firms?

Most HPWPs and combinations of them have a significant and positive relationship if adopted in both the highest-performing and the lowest-performing firms. The presence of employee representation is only positively associated with performance in higher-performing firms. This may be because employee representation mechanisms in poorer-performing firms have to confront more difficult issues and decisions than in more successful organisations.

There is a much stronger positive link for the adoption of individual HPWPs and combinations of HPWPs and performance in poorer-performing firms. This would suggest, if such a link were causal, that poorer-performing firms may stand to gain greater benefits from the application of HPWPs.

Country-specific relationships between HPWP and employee and organisational outcomes

To assess the relative association of HPWPs and organisational performance, an analysis was undertaken at national level. This involved summing the number of positive and statistically significant relationships between each HPWP and performance indicators for each country, obtained through logit model analysis and categorising the outcomes into a high, medium and low level of association between use of HPWPs and performance outcomes. To simplify the reporting, the performance indicators for each country have been summed into a single performance index made up of the following indicators: reported problems with staff absence, reported problems with staff motivation, reported problems with staff turnover, higher-than-average productivity, improved productivity over the last three years, a good work

climate and a good economic situation in the organisation. The following categorisations were used to distinguish between different levels of performance outcomes and results are shown in Table 12 and Table 13.

- No outcome significantly improved = 0.
- One to two performance outcomes significantly improved = L for low association between HPWP (or HPWP index) and outcomes.
- Three to five performance outcomes significantly improved = M for medium association between HPWP (or HPWP index) and outcomes.
- Six to seven performance outcomes significantly improved = H for high association between HPWP (or HPWP index) and outcomes.

Table 12: *Relationship between HPWPs and aggregated performance indicators for 15 countries*

	CZ	BE	DE	UK	PL	HU	AT	ES	FR	IT	DK	HR	EL	FI	NL
Need for training checked periodically	H	M	H	H	M	H	M	M	M	M	M	M	M	L	M
Proportion of high-skilled workforce more than 40%	M	H	H	M	M	H	M	M	M	M	L	M	M	M	L
Time off for training given	H	H	M	M	M	M	M	M	M	M	M	M	M	L	L
Training for new tasks	H	H	M	M	M	M	M	M	M	M	M	M	M	L	M
Any profit-sharing offered	H	H	M	M	H	M	M	M	M	L	M	M	M	M	M
Profit-sharing offered to all	M	L	M	M	M	M	M	M	M	M	M	L	M	M	M
Any performance pay outside top management	H	H	M	M	M	M	M	M	M	M	M	M	M	L	M
Individual performance pay for 25% +	M	M	M	H	M	M	M	M	M	M	M	M	M	M	M
Any share-ownership offered	H	H	H	L	M	L	L	M	M	M	M	M	L	M	M
Share-ownership offered to all	M	H	M	M	L	M	M	M	M	M	M	L	L	M	M
Teamworking important characteristic	H	M	H	H	M	M	M	M	M	M	M	M	M	M	M
Team decides autonomously	M	M	H	H	M	H	M	M	M	M	M	L	M	M	M
Flexible working possible	M	M	H	M	M	M	L	L	M	0	M	L	L	M	L
Flexible working time more than 20%	H	H	H	M	H	M	M	M	M	M	M	M	L	M	L
Part-time work more than 20%	M	M	M	L	M	L	L	M	L	M	M	L	L	L	L
Management and highly skilled staff working part time	M	M	M	L	L	M	L	L	L	M	L	0	L	L	L
Employee representation in place	M	M	M	L	L	M	0	0	M	L	M	L	0	L	L
Ad hoc consultation in absence of employee representation	L	L	M	M	H	M	M	M	M	M	L	M	L	L	M
Index	H	M	H	M	M	M	M	M	M	M	M	M	M	M	M

Source: *European Company Survey 2009*

Table 13: *Relationship between HPWPs and aggregated performance indicators for 15 countries*

	RO	SE	LV	IE	PT	SI	MK	CY	MT	EE	BG	SK	LT	LU	TR
Need for training checked periodically	M	M	M	M	L	L	L	0	0	0	0	0	0	0	0
Proportion of high-skilled workforce more than 40%	M	L	M	M	L	L	L	L	L	0	0	0	0	0	0
Time off for training given	0	L	L	L	L	L	L	0	L	0	0	0	0	0	0
Training for new tasks	M	M	L	L	L	L	L	0	0	0	0	0	0	0	0
Any profit-sharing offered	M	L	L	L	L	L	L	0	0	0	0	0	0	0	0
Profit-sharing offered to all	M	M	L	L	L	0	L	L	0	0	0	0	0	0	0
Any performance pay outside top management	L	M	L	L	L	L	0	0	0	0	0	0	0	0	0
Individual performance pay for 25% +	M	L	L	L	L	L	0	0	0	0	0	0	0	0	0
Any share-ownership offered	0	L	L	L	L	L	0	0	0	0	0	0	0	0	0
Share-ownership offered to all	L	L	L	L	L	L	L	0	0	0	0	0	0	0	0
Teamworking important characteristic	L	M	M	M	L	L	L	0	0	0	0	0	0	0	0
Team decides autonomously	L	L	M	L	L	L	L	0	L	0	0	0	0	0	0
Flexible working possible	L	L	L	L	L	L	L	L	0	0	0	0	0	0	0
Flexible working time more than 20%	L	L	L	L	L	L	L	L	0	0	0	0	0	0	0
Part-time work more than 20%	0	L	0	L	L	L	0	0	0	0	0	0	0	0	0
Management and highly skilled staff working part time	L	L	L	L	L	L	L	0	0	0	0	0	0	0	0
Employee representation in place	L	L	M	L	L	L	L	0	0	0	0	0	0	0	0
Ad hoc consultation in absence of employee representation	L	L	M	L	0	L	0	L	0	0	0	0	0	0	0
Index	0	L	L	L	L	L	L	0	0	0	0	0	0	0	0

Source: *European Company Survey 2009*

Overall, the practices that have the highest consistent levels of performance outcomes across different countries are checking training needs periodically and the use of flexible working by at least 20% of staff. In contrast, the presence of share-ownership and its availability to all staff has consistently low or insignificant associations across most countries. This could be explained because the ECS does not measure specific dimensions of share-ownership that have been identified as important through other studies, for example the proportion of employees who take up share-ownership and whether voting rights are conferred with ownership (Poutsma et al., 2002).

Widespread support is found concerning links between use of multiple HPWPs in the index and performance outcomes across many European countries. This is consistent with sectoral studies as well as national-level surveys. A study of the European Manufacturing Survey constructed a number of indices that predict firm innovation, for which 'organisational-process innovation' includes some HR policies, in particular the use of teams in production (Lighart, Vaessen and Dankbaar, 2008). Organisational process innovations tend to reduce delivery times and increase the number of products delivered on time, which is comparable to the findings from the ECS on workplace practices and improved productivity. In Germany, analyses of HPWP on productivity using the IAB survey show a number of complementarities between bundles of practices including training, teamworking and delegation of decision-making (Moller, 2007).

There is also some evidence of groupings or patterns of countries occurring with a similar degree of associations between different types of HPWPs and performance outcomes. The first group of countries in Table 13 consists of Western European countries where ideas of HPWP are well established, including in the UK, Belgium and Germany, and central European newer Member States including Hungary, Poland and the Czech Republic which are continuing to undergo rapid industrial modernisation and adopt new HPWPs as a result of foreign direct investment and transmission of HR policies from multinational companies. The next group consists of the remaining countries in Table 13 where there are moderate links between HPWPs and performance outcomes. This includes the southern Mediterranean countries of Greece, France, Spain and Italy and some northern central European countries including Denmark and the Netherlands. In the southern Mediterranean countries, concepts of HPWP are less well developed and within the northern central European countries, particular institutional structures and policies may play a greater role than individual practices in supporting employment regimes. The remaining group of countries includes those with developing economies such as Portugal, Romania, Latvia and Slovenia, where HPWP is not generally adopted. The position of Sweden and Finland in the middle section of the table could be explained by their longstanding adoption of progressive work practices, often through legislation, which would explain why there is little differentiation in the use of these practices and their links with performance in different workplaces. The last group of countries, on the right-hand side of Table 13, including Latvia, Bulgaria and Luxembourg, are characterised by small sample sizes and the presence of a number of transitional, developing economies, which explains the lack of any association between HPWPs and organisational performance, either because it is not measurable or due to lack of adoption.

Contextualising the findings for selected countries

It is also possible to consider these results in the light of broader empirical findings on the take-up and application of HPWP within some of the countries, where suitable data exists.

Within Denmark, research has found positive associations between the combination of HR and work organisation practices and higher levels of organisation performance (Jensen and Vinding, 2003; Laursen and Foss, 2003). Based on the DISKO survey into innovation practices, some support was found for links between HPWP adoption and innovation, which is consistent with higher levels of organisational performance (Jensen and Vinding, 2003). This research specifically found that firms adopting specific practices – interdisciplinary work groups, job rotation and delegation of responsibility – performed as well as those that adopted all seven HR and work organisation practices. Kristensen (1997) finds that firms adopting measures that combine the delegation of responsibility, development of employee skills and product innovation tend to have higher productivity and productivity growth, but only for firms operating in markets for brand goods – where innovation and flexibility are particularly important. This finding is echoed by the review of DISKO research by Ramioul and Huys (2007). It highlights the importance of product market context and strategy, which may suggest that the success of HPWPs is contingent upon matching them to organisational objectives. Provision of internal training is also associated with higher organisational performance while there is a weaker relationship between innovation performance and performance-related pay (Laursen and Foss, 2003). Both of these results are broadly consistent with the findings from the ECS analysis. Provision of internal training may reflect a greater focus on in-house and on-the-job training, which may explain why time off for training has a medium association with performance outcomes in Denmark. The relationship between organisational performance and performance-related pay found in the broader literature on HPWPs is generally ambiguous.

There is extensive literature on the German application of HPWPs and relationships with performance outcomes using the IAB survey, much of which supports the high association between training, teamwork and performance outcomes. For example, Zwick (2002, 2005) finds strong positive impacts of formal internal and external training on firm productivity in a methodologically rigorous study which controls for a number of other influences, and similar findings are provided in an analysis of training and organisational performance in a study of a German region (Landsberg and Wehling, 2002). Such evidence is likely to reflect the strong institutional embeddedness and significance of the German training system in shaping the adoption of HPWPs concerned with training. Similarly, Zwick (2004) shows that

teamwork and autonomous work groups significantly increase average establishment productivity, which is consistent with the high level of association with performance outcomes in the ECS analysis. Other studies show that the presence of flexible working can improve technical production efficiency (Wolf and Beblo, 2004), consistent with the moderate associations found in the ECS analysis.

There is more mixed evidence on the impact of incentive pay and performance outcomes for German workplaces. The relationships between performance pay and organisational outcomes are moderately positive in the data, which underpin Table 12. A previous analysis of the IAB survey has found similar results for the impact of performance pay on productivity (Bellmann and Kleinhenz, 2002). Later studies using stricter methodologies that control for selectivity effects have found no impact of performance pay (Bellmann and Moller, 2005; Strotmann, 2006).

Some relationships appear to be contrary to expectation and require contextualising against other findings in the empirical literature. For example, the adoption of flexible working practices and part-time working appears to have low associations with performance outcomes in Sweden and Finland, where other evidence reports such practices are relatively highly developed (Ramioul and Huys, 2007). Only where at least 20% of the workforce makes use of flexible working is there a moderate association with performance outcomes in Finland. This may reflect the relatively longer history and more advanced application of such practices, which means that their mere presence constitutes a cultural expectation and as such has no impact on employee outcomes.

Within France, there are a number of similar associations between HPWPs and performance outcomes evident in analyses of the Réponse survey, although this is based on a survey conducted in 1998. Team-based work organisation and job rotation were found to be associated with innovation in products or services (Lorenz, Michie and Wilkinson, 2004). However, other elements of HPWPs not covered within the ECS were found to be important in predicting this outcome and these included suggestion schemes, negotiation on staffing and provision of financial information.

Other analysis of the Réponse survey found that applying an index of HRM policies is associated with a positive effect on productivity in French equipment manufacturing firms (Doucouliagos and Laroche, 2004). In contrast to a number of other countries, where formal employee representation has no, or low, links with performance indicators, France, in the ECS analysis, experiences moderate positive associations. Similar analysis of Réponse finds that the presence of multiple unions is associated with increased productivity, although individual union presence has a negative effect and other work has found no impact in relation to union presence on financial performance (Doucouliagos and Laroche, 2004). Amosse and Wolff (2008) find no impact from performance-related pay on employee outcomes in France, and this is consistent with the underpinning analysis of ECS.

In the UK, a wide range of studies has examined links between HPWP practices and organisational performance, often concluding that there are broadly positive results (Wood, 1999; Ramsay et al., 2000). These are sometimes conditioned in studies that have linked HPWPs to particular business strategies. Thus, one study finds that HPWP has greater performance effects when implemented with a business strategy which focuses on quality enhancement and innovation (Michie and Sheehan, 2005). Other research by Wood and De Menezes (2008) has implied that autonomy in job design and team-based work organisation, together with variable pay, are important components with combinations of HPWPs, and teamworking appears with high associations with UK performance outcomes in the ECS analysis. The data presented above show there is no or very limited evidence of associations between presence and intensity of flexible working, part-time working and performance outcomes. This is reasonably consistent with the WERS analyses. Studies have sought to establish whether integrating family-friendly management practices with other HPWPs produces better organisational performance (Wood et al., 2007) but concluded that the effects are neutral.

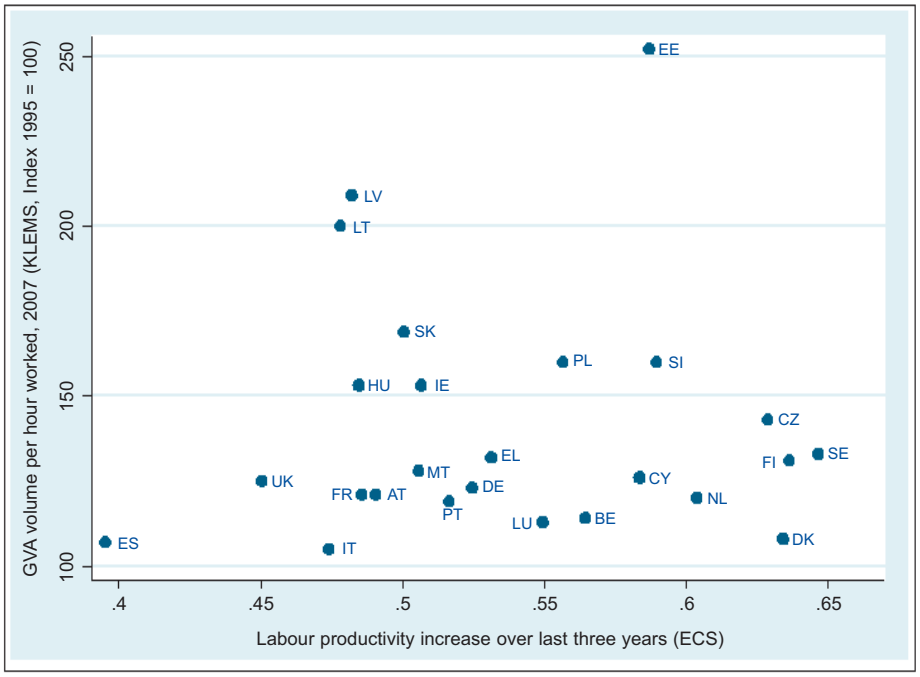
Comparisons of organisational performance outcomes with KLEMS data

The purpose of this analysis was to see if the results from the ECS concerning productivity indicators could be compared to KLEMS data on national-level productivity, with the possibility of identifying a logic chain between self-assessed performance at the level of individual firms and national performance. The indicators from the ECS for organisational productivity were recoded to identify firms with superior productivity and productivity improvements.

KLEMS data can be used to examine changes in labour productivity arising through comparing growth rates in gross value added (GVA), the national growth of the share of high-wage workers and the growth of the total number of hours worked in the economy. This can partly indicate changes in the use of high-productivity labour strategies and the contribution of labour composition changes to GVA growth.

Figure 2 shows the relationship between increases in firm-level labour productivity and the index of GVA volume per hour in 2007. The three Baltic states of Estonia, Latvia and Lithuania show anomalous results, which may reflect their trajectory of economic development in the 1990s following political independence. The scatter graph suggests a positive correlation between both measures, although the correlation result is low (r = 0.02). The correlation increases to r = 0.12 when excluding the Baltic EU Member States, but is still very close to zero.

Figure 2: *Labour productivity increase (% of all firms, ECS data) and national GVA per hour worked volume index, 2007 (KLEMS data)*



Source: *ECS 2009 and EU KLEMS*

Overall, the results showed a limited range of associations between the two datasets. This may be due to the different time periods for the two data sources as KLEMS data is available only until 2007, and also the possible challenges of seeking to aggregate data which asks individual firms to compare their productivity to other firms in the same sector with national-level datasets. The other results are available on request.

Conclusions and recommendations 4

This report has undertaken a multivariate analysis of links between HPWPs and a number of measures of performance in firms across 30 European countries, linked to an analytic framework underpinned by the AMO model of employee performance. The hypotheses it set out to test and the results for each of them are stated below.

> *Hypothesis 1 – each variable within the four dimensions of HPWPs selected for study has a positive, statistically significant and independent association with each of the employee outcome measures when organisational context variables are controlled for.*

There is partial support for this hypothesis as there are significant positive relationships between a number of HPWPs and employee outcomes. Overall, practices involving some dimension of teamwork and training appear to have more frequent statistically significant relationships with employee performance outcomes than other HPWPs. The relationship between dimensions of flexible working and performance-pay practices is more complicated and ambiguous. There is relatively limited evidence of a positive statistical relationship between social dialogue and employee outcomes.

> *Hypothesis 2 – each variable within the four dimensions of HPWPs selected for study has a positive, statistically significant and independent association with each of the organisational outcome measures when organisational context variables are controlled for.*

There is reasonably strong support for this hypothesis as there are significant relationships between a wide variety of HPWPs and organisational outcomes. All the practices involving some dimension of teamwork and training appear to have statistically significant relationships with the economic state of the organisation and labour productivity. The presence and breadth of performance-pay practices has a positive and significant relationship with the economic state of the organisation, higher-than-average productivity and improved productivity. There is no significant relationship between any pay practice and a good work climate, which suggests that the use of incentive pay may have an ambiguous effect on the quality of management and employee relationships. Employee representation has mixed relationships with organisational performance indicators, being positively associated with improvements in productivity but negatively associated with a good work climate and a good economic position for the organisation. The incidence of industrial action has no links with any HPWP.

The evidence from the assessment of links between individual HPWPs and organisational performance and employee performance suggests that training and teamwork practices may be particularly important. Training and teamwork both contribute to multiple elements of the AMO model, reinforcing ability, motivation and opportunity. These results suggest that the evidence may be pointing to these practices as core components of HPWP bundles. This could help the development of future HPWP theory, because these two practices could be situated at the heart of either a configurational approach or a universalistic approach to the development of HPWP. They may also indicate areas for policy focus to enhance diffusion.

> *Hypothesis 3 – an index of all the HPWPs has a positive, statistically significant and independent association with each of the performance outcome measures when organisational context variables are controlled for.*

There is strong support for this hypothesis as there are significant relationships between the HPWP index and all of the organisational outcomes and all but two of the employee outcomes. One employee performance measure has no significant relationship and the other is employee retention, which is likely to be influenced by many factors beyond HPWPs. This supports the bundling argument, which underpins the theories of HPWPs by suggesting that using combinations of these practices has an association with performance outcomes. The study has not tested configurational versus universal approaches, so cannot state that either of these approaches is preferable, but the evidence shows that supporting firms to think about how best to combine HPWPs remains a desirable activity for research and policy.

The research also assessed links between employee outcomes and organisational performance outcomes in an attempt to see whether HPWPs are associated directly with organisational performance or whether they may be mediated through the 'black box' of employee performance. The findings found a number of strong positive associations between employee outcomes and the incidence of industrial action and the economic state of the organisation. There were also statistically significant and positive relationships between employee outcomes of absenteeism, turnover and motivation, management and employee representatives making sincere efforts to solve common problems and the full range of organisational performance outcomes. A further check through the creation of an index of employee outcomes revealed significant and positive statistical associations with all organisational performance outcomes. This suggests that employee outcomes and organisational performance outcomes are mutually consistent and reciprocal.

The tests for variations in relationships between HPWPs and performance among higher- and lower-performing firms showed that some HPWPs have significant positive relationships with both high- and lower-performing firms, but the size of coefficients was larger for poorer performers. This suggests that they may have more to gain from the adoption of HPWP. Therefore, continued activity to disseminate the benefits of HPWP to organisations may be worthy of policy attention.

The top 10 HPWP practices in terms of the frequency of their association with positive employee and organisational outcomes are shown in Table 14.

Table 14: *HPWPs with links to the greatest number of performance outcomes*

Rank	Name of HPWP practice	Performance outcomes
1	Autonomous teamworking	No reported problems of staff absence, no reported problems of staff motivation, no reported problems of staff retention, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
2=	Teamworking an important characteristic of the workplace	No reported problems of staff absence, no reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
2=	Need for training checked periodically	No reported problems of staff absence, no reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
2=	Proportion of high-skilled workforce more than 40%	No reported problems of staff absence, no reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
5=	Time off for training given	No reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
5=	Training for new tasks	No reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm
5=	Profit-sharing offered	No reported problems of staff absence, no reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years, good economic situation of the firm
8=	Flexible working available	No reported problems of staff motivation, no hostile relationship between managers and employee representatives, higher-than-average workplace productivity, productivity improved in last three years
8=	Flexible working taken up by at least 20% of staff	No reported problems of staff motivation, higher-than-average workplace productivity, productivity improved in last three years
8=	Ad hoc consultation of employees in the absence of formal employee representation	Higher-than-average workplace productivity, productivity improved in last three years, good work climate, good economic situation of the firm

Source: *European Company Survey 2009*

This shows that practices concerning training, teamworking, flexible working, a particular form of variable pay and employee consultation mechanisms are those which are most strongly associated with the greatest range of improved performance-outcomes.

There is some evidence of variation in the effects of HPWPs across different countries but there are common trends in the significance of training, teamworking practices and combinations of multiple HPWPs. There are also subtler differences between countries that are likely to reflect the institutional and labour market regimes operating in different Member States and would benefit from further analysis at national level.

We must also remind readers of the need for caution in interpreting the findings. Throughout this report we refrain from making direct statements about causality in the relationships observed between HPWP and employee and organisational outcomes. In the majority of cases we find that the presence of HPWP is associated with better outcomes, but we cannot definitively say that HPWP causes improved outcomes for firms and employees. This is because we cannot be sure of the direction of causality in the relationship between improved performance and the adoption of HPWP due to use of cross-sectional data and the possible influence of other variables not captured within the survey.

In drawing the conclusions about the positive connections between HPWPs and sustainable organisational performance, we must recognise that the range of performance dimensions considered are relatively narrow and mostly derive from the management perspective on desirable employee outcomes. The literature review noted that the AMO theory is not the only explanation of how HPWP can raise firm performance. Labour process theories, in particular, suggest HPWPs work by increasing pressure and stress on employees, forcing them to work harder. This means that practices associated with improved organisational outcomes can have a detrimental impact on employees. To consider the impact on employees, we would need to draw on variables including measures of job strain, stress, burn-out and job satisfaction, which are not available in the ECS. Thus, the sustainability of organisational performance achieved through these practices remains in question. Our data show that, for example, the use of performance pay outside top management is positively associated with higher productivity, increases in productivity and overall economic performance but also increased problems with absenteeism, employee motivation and staff retention and none of the pay practices has a significant association with a good work climate.

Recommendations for policy

Policy support for organisations

The main issues emerging from the analysis of the ECS concern the application of sustainable management practices where the results are ambiguous or contrary to expectation. There are five areas where consideration should be given to policy support for organisations in implementing HPWPs.

- The incidence of employee complaints about lack of career development opportunities and rejected requests for training is higher among firms with higher-skilled staff and which provided training. This suggests that firms may need support in managing the expectations of staff and in considering how to develop internal labour markets that can meet staff desires for career progression.
- Similarly, firms that provide training are more likely to receive complaints about pay. This suggests a need to support firms in integrating pay and training practices and to manage staff expectations about rewards for skills acquisition and deployment.
- Firms that provide flexible working hours, that have at least 20% of staff making use of flexible working and part-time working, and where managerial staff work part time are more likely to experience higher levels of discontent about career-development possibilities. This points to a continuing need to support and encourage organisations to enable them to provide equality of opportunities to staff using different modes and forms of working time.

- Firms with lower levels of performance may stand to gain greater performance improvements from implementing HPWPs than those with higher levels of performance. Policy support should therefore provide a continued focus on enabling the diffusion of HPWPs across firms where their sectors and business strategies may benefit from these practices.
- There is mixed evidence concerning the role of formal employee representation but evidence that joint efforts by managers and employees to solve problems and create good-quality working relationships are associated with beneficial performance outcomes. This suggests that enabling social partners to work together effectively and supporting firms to realise the benefits of this is worthy of continued policy attention.

Recommendations for future development of the ECS

As part of the project, the design of the ECS has been reviewed in the light of the literature and the results of the analysis, with a view to making recommendations. The purpose of the review was to identify any areas where supplementary questions and topics and/or the removal of questions/topics, combined with rephrasing of questions, would facilitate more robust and methodologically sound analysis or would support the application of more sophisticated analysis techniques that could be used by members of the research and policy communities across Europe.

The ECS has to meet the needs of several different stakeholders and is subject, like all surveys, to restrictions on its length. Our recommendations (which can be seen in full in Appendix C) therefore include a mixture of refinements to existing questions and recommendations for new questions. Within each section we have categorised our suggestions into high, medium and lower priorities.

The recommendations divide into the following four broad types.

Improve understanding of application rather than incidence of workplace practices

These suggestions are made with the intention of obtaining less subjective data by attaching numerically measurable indicators within questions and also in assessing the *application* rather than the *presence/absence* of a policy or practice. This is because developments in the theory of HPWP have stressed the importance of assessing the coverage of practices to understand how comprehensive and potentially uniform the experience of HPWP is for employees across each workplace.

One important modification worth considering would be to extend the use of the employee representative questionnaire to workplaces where there is no formal employee representative. In surveying only formal employee representatives, this yields responses for approximately only 25% of workplaces. As a result, the views and opinions of employees working in SMEs are less likely to be captured in the ECS because of the lower incidence of formal employee representation in these companies. This may have significant cost implications for the survey.

Improve quality of data on organisational performance

A number of suggestions are made to improve the measurement of organisational performance by using scalable questions to enable better differentiation between organisations and to improve the quality and range of statistical analysis. This would involve asking questions that seek quantitative information on organisational performance, such as percentage ranges for employee absence and turnover rates. This carries the potential risk that organisations may not be able to provide this information, but this can be partially alleviated by using ranges for responses rather than asking for precise information.

Improve range of questions to cover key practices within HPWP theory currently not covered in the ECS

Several question areas that theories and other studies of HPWP have shown to be important could be included within the ECS. These areas of questioning include performance appraisal, involvement of employees in quality/continuous improvement initiatives, consultation and communication through informal channels in addition to formal employee representation, and the quality of line management and leadership through organisational change.

Improve range of contextual questions which may be relevant to current economic climate and monitoring of organisational responses

Questions could be included on organisational capability to manage change, to innovate in products/services and proportion of goods/services sold to overseas customers. These capabilities are likely to be critical for organisations to drive the post-recession economic recovery across Europe and monitoring organisational performance in this area is likely to be important to guide policy support interventions at national and EU level.

Our recommendations for improvements are shown in more detail in Tables 15–17 in Appendix C.

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Appendices

Appendix A: Technical methodology description

1. Controlling for organisational context

The models control for all firm characteristics as specified below and omit one category in either one of the dimensions, firm size, sector, foreign ownership, employment growth, change in circumstances, country and the share of female employees in categories.

- Firm size

  Omitted category: size 50–99

  Variables included: size 10–19, size 20–49, size 100–149, size 150–199, size 200–249, size 250–299, size 300–399, size 400–499, size 500+

- Sector of activity

  Omitted variables included: manufacturing/utilities

  Variables included: construction, trade, repair of motor vehicles and motorcycles, transporting and storage, accommodation and food service activities, information and communication, financial and insurance activities, real estate activities, professional, scientific and technical activities, administrative and support service activities, public administration and defence, social security

- Foreign ownership

  Omitted category: domestic ownership

  Variables included: fully or partially owned by foreigners, fully owned by foreigners

- Employment growth

  Omitted category: no change

  Variables included: employment increased, employment decreased

- Change in circumstances

  Omitted category: no change

  Variables included: acquisition of other company, subject to takeover, subject to merger, relocation, demerger

- Country

  Omitted category: DE

  Variables included: BE, BG, CZ, DK, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK, HR, MK, TR

- Female workforce

  Omitted category: female workforce less than 20%

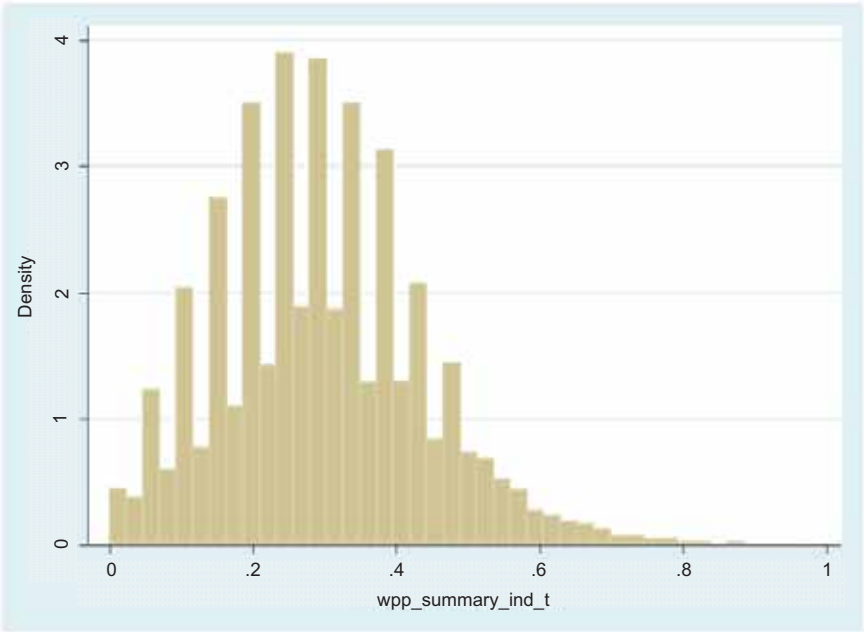
  Variables included: female workforce 0%, from 20% to less than 40% female workforce, from 40% to less than 60% female workforce, from 60% to less than 80% female workforce, from 80% to less than 100% female workforce, all female workforce

2. Method for creating index of workplace practices: descriptive analysis

This index is depicted in the histogram of Figure 3, showing the different values of the index (wpp_summary_ind_t) and the empirical distribution of firms using different numbers of HPWPs observed in the sample. Since the empirical distribution of all different values add up to one, the histogram implicitly delivers an estimate of the probability density of the underlying variables, which is the way STATA describes the relative frequencies. As can be seen from the figure, the distribution of the index is uni-modal. This index shows a mean of .294 (standard deviation of .141), indicating that implementation of all HPWPs is highly unusual and was found in only one firm. The median value is .287 and the .9 percentile begins above .477. No firm implements all 18 practices, which results from two mutually exclusive categories,'Employee representation in place' or 'Ad hoc consultation in the absence of it'. However, only one firm implements the remaining 17 practices.

Cronbach's alpha was used to measure the inter-correlations between the various dimensions used in the index. A high value of alpha was found when constructing the index of workplace practices (.65) and organisational outcomes (.67), albeit slightly below the critical value of 0.7 suggested by Nunnally (1978) as an acceptable reliability coefficient for measuring the same 'underlying' construct. There are examples in the literature using values of below the 0.7 threshold. Alternatively, it would be possible to exchange or drop some of the variables covered by the index in order to increase the alpha value. However, this would undermine the theoretical model for the study outlined in Chapter 2 by choosing a data-driven selection of different variables for convenience. The report uses the original set of values proposed for the index as they can be more consistently analysed using HPWP theory.

Figure 3: *Distribution of HPWP use across firms*



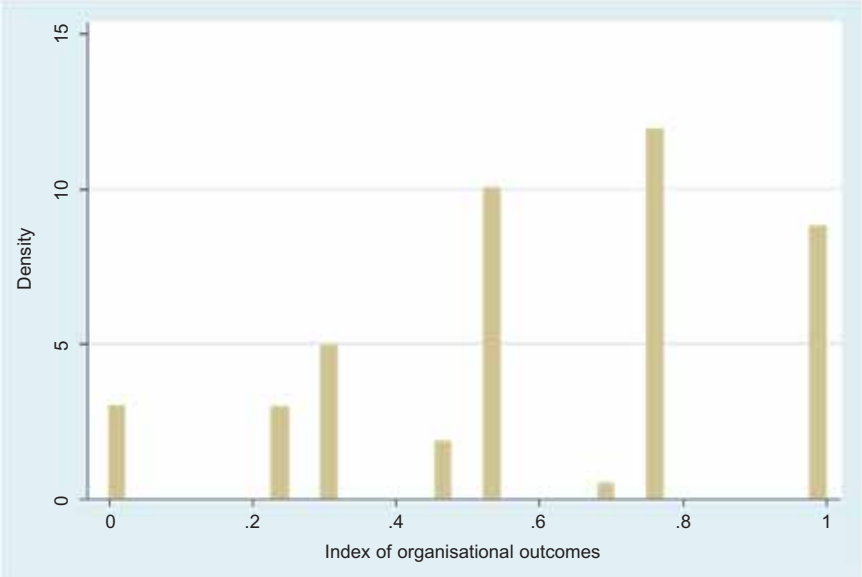
Source: *European Company Survey 2009*

Note that the distribution shows a relatively long right tail and relatively few high values, that is, relatively few firms implement high numbers of the different workplace practices covered in the index.

3. Relationship between HPWP and organisational outcomes for high- and low-performing firms

The index of organisational performance was generated in the same way as for the indices for employee performance and the index of HPWPs by adding up the standardised variables and transforming them into a score between zero and one. Because there are only four performance measures, the index has 16 possible scores. When showing the distribution of this index, we notice a comparatively long left tail, a median of 0.53 (compared to a mean of .61) and managers in about 20% of the firms rating the organisations as achieving the highest possible performance outcomes in Figure 4.

Figure 4: *Distribution of organisational outcome index*



Source: *European Company Survey 2009*

This measure therefore does not enable us to identify the top decile of the firm performance because there is insufficient variation in firm ratings. The upper part of the distribution shows that firms performing at the 90th percentile and the best performer both score one for this indicator. However, quantile groupings of firms can be identified for those in the upper and lower quartiles of the performance distribution and these are used for the analysis. Firms are therefore categorised according to an index of their performance outcomes and these groupings are used to estimate the relationship between use of different HPWPs by firms scoring in the top 25% of performance outcomes and those scoring in the bottom 25% of performance outcomes.

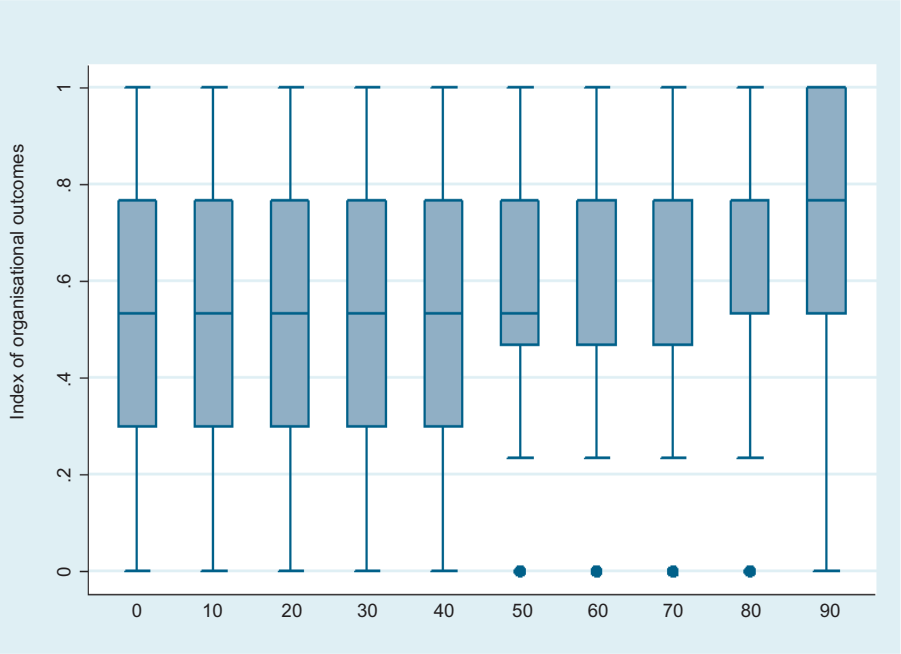
Effect estimates of HPWP and the index of organisational outcomes are based on an OLS estimate of one coefficient, which may be unsuitable if there are different effects at the different parts of the distribution. For example, there may be quite substantial gains from implementing particular HPWPs for lower performers whereas there may be relatively few gains for high performers. This may be especially important for the long left tail of firms with lower organisational performance shown in Figure 4. Therefore, we estimate the relationship between HPWP and organisational outcomes with empirical quantile functions for the upper and lower quartiles of firm performance.

Such an estimation of quantile regressions can be compared with estimations of OLS regression showing the impact of a particular HPWP on the organisational performance. An estimated OLS coefficient would show the effect of the existence of a particular workplace HPWP on the performance index as the dependent variable of the model, for example, how much the existence of a particular practice improves or worsens this outcome when controlling for organisational context variables. The OLS regression evaluates the impact of policies on mean values of organisational performance as observed in the data.

In contrast, coefficients estimated in quantile regressions evaluate the effect of a particular HPWP on a particular quantile as observed in the data, for example on firms among the lowest or highest 25% of all firms with regards to their performance outcome, controlling for all relevant organisational and firm characteristics. These models estimate outcomes of HPWP considering the differences between firms, and only for the 'average' ECS firm as in OLS regression.

Using quantile regressions as an instrument in order to understand the relationship between HPWP and organisational performance for high and low performers first requires ordering and sorting data carefully to show the different percentiles of the distribution relative to independent variables. In Figure 5, we show this relationship by displaying the empirical distribution of performance in relation to the firms' index of HPWPs adopted. This index is not shown with all values as in a histogram, but groups firms into deciles according to their values for this index.

Figure 5: *Index of organisational outcomes relative to the decile of HPWP index*



Source: *European Company Survey 2009*

The graph represents the performance distribution of the firms, based on the index of organisational performance in a box plot (on the y-axis) in relation to their particular position in implementing HPWP. This is represented by their particular decile of the HPWP index (in the axis of categories, indicated by 10th percentile, 20th percentile, and so on). In this diagram, the boxes represent half of the distribution of organisational performance relative to the percentile of the index of workplace HPWP and the horizontal line in the middle of the boxes (or sometimes at the upper end) represents the median value of performance. As can be seen, the full range of performance outcomes is usually between zero and one for any of the categories, even for firms in the upper percentiles of workplace HPWP implementation. However, firms which implement a higher number of HPWPs have a higher median and interquartile range in the distribution of organisational performance outcomes.

Appendix B: Workplace practices and employee complaints

Table 15: *Workplace practices and employee complaints*

	Full-time workers desiring but not getting a part-time job	Night or shift workers desiring but not getting a day job	Increased overtime without much consultation	Too much weekend work	Discontent related to pay levels or pay systems	Rejected requests for further education or training	Discontent with career development possibilities	Bad social climate in teams, working groups or departments	Discontent with the health and safety situation	Discontent regarding the discretion about when to work and when to	Management and employee representation make sincere efforts to solve problems	The relationship between management and employee representation best hostile
Need for training checked periodically	0.06	-0.04	-0.09	0.11	0.01	0.06	0.24	0.06	-0.08	-0.07	0.22	-0.11
Proportion of high-skilled workforce more than 40%	0.03	-0.08	-0.12	0.25	0.05	0.20	0.25	0.01	0.03	-0.03	0.11	-0.06
Time off for training given	0.06	0.22	0.09	0.07	0.16	0.21	0.20	0.07	0.10	0.23	-0.06	-0.09
Training for new tasks	0.05	0.09	0.17	0.00	0.13	0.16	0.15	0.08	0.04	0.16	-0.04	-0.10
Any profit-sharing offered	-0.16	-0.13	-0.06	-0.08	0.07	0.00	-0.01	-0.09	0.01	-0.21	0.09	0.00
Profit-sharing offered to all	-0.13	-0.20	-0.06	0.00	0.14	0.04	0.06	-0.02	-0.01	-0.16	0.03	-0.02
Any performance pay outside top management	0.03	0.03	0.04	0.08	0.09	0.09	0.05	-0.01	0.01	-0.07	0.10	-0.13
Individual performance pay for 25% +	0.08	-0.02	0.02	-0.12	0.03	0.01	0.03	0.06	0.01	-0.15	0.01	-0.19
Any share-ownership offered	-0.03	-0.03	-0.09	0.06	0.13	-0.04	0.12	0.09	0.10	0.17	0.34	-0.35
Share-ownership offered to all	0.10	0.10	-0.12	0.09	0.15	0.02	0.17	0.23	0.20	0.19	0.24	-0.13
Teamworking important characteristic	0.04	-0.07	0.01	-0.05	-0.07	0.00	0.01	-0.10	0.03	-0.03	0.18	-0.04
Team decides autonomously	-0.05	-0.06	-0.22	-0.15	-0.03	0.04	0.01	-0.07	0.01	-0.05	0.09	-0.16
Flexible working possible	0.12	0.11	-0.05	-0.06	0.03	0.05	0.15	0.12	0.03	-0.01	0.09	-0.20
Flexible working time more than 20%	-0.08	-0.04	-0.08	-0.19	0.14	0.06	0.21	0.14	-0.04	-0.08	0.00	-0.29
Part-time work more than 20%	-0.05	-0.34	-0.09	0.02	-0.09	-0.24	-0.17	0.06	-0.10	-0.01	-0.03	-0.21
Management and highly skilled staff working part-time	0.10	-0.02	-0.08	-0.16	0.10	0.07	0.13	0.09	0.04	0.02	-0.08	-0.12
Index of all workplace practices	0.06	-0.08	-0.30	-0.02	0.50	0.58	0.92	0.53	0.26	0.01	0.43	-1.32

Green: beneficial relationship between practice and outcome
Red: adverse relationship between practice and outcome
Source: *European Company Survey 2009*

Appendix C: Survey recommendations

Table 16: *Recommendations for revisions to existing questions in the ECS manager questionnaire*

Existing question	Recommendation for revision	Rationale for recommendation	Priority rating (scale 1–3 where 1 = high and 3 = low)
MM302	Replace with question taken from Meadow survey: 'What percentage of workers choose when they begin or finish their daily work?'	This question gains information on coverage of the scheme rather than incidence and therefore assesses the numbers of employees exposed to this HPWP.	1
MM303, MM304 and MM305	Could remove MM303, MM304 and MM305	Detailed questions asked about operation of working time arrangements within European Working Conditions survey, and coverage of other practices not currently addressed in ECS is more critical to a survey on workplace practices.	1
MM454	Rephrase to 'What percentage of employees…', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% or 75% or more'. Question could also be shortened by using question wording from Meadows questionnaire: 'Approximately what percentage of the employees at this establishment has some part of their pay directly determined by their performance or by the performance of a wider group?'	Broad question about incidence of all forms of incentive pay may be more appropriate given length of survey and limited opportunity to ask questions about detail of pay systems.	1
MM460 – use of profit-sharing	Rephrase to 'What percentage of employees participate in any profit-sharing scheme…', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	This question gains information on coverage of the scheme rather than incidence and therefore assesses the numbers of employees exposed to this HPWP.	1
MM461	Remove this question about proportion of workforce eligible for profit-sharing.	In a questionnaire with limited space, it is more important to identify participation levels for each practice rather than eligibility.	2
MM463 – use of share-ownership	Rephrase to 'What percentage of employees participate in any share-ownership scheme…', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	This question gains information on participation in the scheme rather than incidence and therefore assesses the numbers of employees exposed to this HPWP.	1
MM464	Remove this question about proportion of workforce eligible for share-ownership.	In a questionnaire with limited space, it is more important to identify participation levels.	2
MM558	Remove this question and replace with 'What percentage of the employees at this establishment currently works in a team where members jointly decide how and by whom work is done?', with responses of 'none, 1% to 25%, 25% to 49%, 50% to 74% and 75% or more'.	Original question wording in English could be more precise and less subjective. Using this question would also enable removal of question MM559.	1
MM561	Suggest rephrasing to 'What percentage of workers in (take list of categories from MM562) have their training needs reviewed on at least an annual basis?', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'. Use a specific age group to define 'older' employees, for example Cedefop uses over the age of 50 in relation to skills acquisition.	Question wording could be improved to make it more specific and clearly referring to employees and time-bound to a specific period. Avoids subjectivity of employer in defining 'older'. This would remove the need to ask both questions MM561 and MM562 and shorten the questionnaire to make room for other questions.	1

Existing question	Recommendation for revision	Rationale for recommendation	Priority rating (scale 1–3 where 1 = high and 3 = low)
MM563	Suggest rephrasing to 'What percentage of employees have received any of the following types of training or support for training in the past year: a) on-the-job training, b) paid time off for training which the organisation or state has funded c) paid time off for training the employee has funded d) unpaid time off for training which the organisation or state has funded e) unpaid time off for training which the employee has funded', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Need to capture multiple forms of training including on and off the job and also whether training is funded by the employer/government or the employee. This helps assess level of employer commitment to workforce development.	1
MM564	Suggest adding a further response option here: 'to prepare employees for promotion or assist their career development'. Revise MM 564_03, 'To prepare employees for new tasks', to 'To prepare employees for new tasks in their current job'. Revise MM 564_01, 'The vocational adjustment of new employees', to 'Initial training for new recruits'. Review and revise MM 564_05, 'Training after long absence'. Suggest limiting the number of options employers can choose to one.	Training provision for the purpose of developing an internal labour market and succession planning is an important component of HPW approaches. MM 564_03 is ambiguous – it could mean preparing employees for new tasks in their current roles or new tasks in a new role. This phrasing is clearer and shorter in English. The motivation for posing this option and what it means is not clear. This will enable assessment of the employer's overall approach to training and distinguish between those who focus on induction training and those who engage in more ongoing staff development.	1
MM403	Suggest rephrasing to 'What percentage of temporary staff whose fixed-term contracts expired in the past 12 months got a further contract in the establishment immediately afterwards?', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Improves clarity, gains numerical information and removes need for supplementary question.	2
MM256	Suggest rephrasing to 'What proportion of managers and staff in professional occupations work part time?'	Improves information on coverage of working time arrangements and clarity, as use of 'highly qualified' is an attribute of person rather than role and could be confusing. (Also removes the need for question MM257.)	2
MM257	Remove this question if recommendation for rephrasing of MM256 is adopted.	Question area covered by revised wording to MM256.	2

Table 16: *Recommendations for additional questions for the ECS manager questionnaire*

Topic area	Proposed new question	Rationale for recommendation	Priority rating (scale 1–3 where 1 = high and 3 = low)
Performance appraisal	Add question taken from Meadow survey: 'Approximately what percentage of employees has a performance appraisal or evaluation interview at least once a year?', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Assessment of employee performance is integral to all theories of HPWP and included in most existing surveys.	1
Employee involvement in continuous/quality improvement activities	Add adapted question taken from Meadow survey: 'What percentage of employees take part in activities to improve the quality of products or services or to improve work processes?' A prompt might be needed to suggest appropriate names of such groups, for example problem-solving groups, with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Direct involvement of employees in improvement of work processes, products and services as well as indirect representation is identified as an important mutually complementary element of HPWP in a number of studies.	2
Direct communications	Add adapted question taken from Meadow survey: 'Does the workplace have meetings between line managers and all workers for whom they are responsible on at least a quarterly basis?'	Direct communication between employees and managers to provide information and discuss work group priorities is a core component of HPWPs, often serving as a way of translating higher-level business issues and priorities to work group concerns.	3
Training	'What is the average number of hours of training received by each worker in the past 12 months?' (include ALL on-the-job and off-the-job training supported by employer either through paid time off and/or contribution towards cost of training). Open code, but could develop prompts based on average duration of training participation, for example using CVET survey.	Measures of training duration can be important to capture the significance and intensity of training as part of the organisation's approach to HPW.	2
Export orientation	'What percentage of goods and services are supplied by this workplace to customers outside the country in which this workplace is based?' Response scale of none, 1% to 25%, 25% to 49%, 50% to 74% and 75% or more.	Export orientation may be very important for economic recovery and analysing links between workplace practices and performance of such organisations may be important to develop suitable policy support to improve collective European business performance in this area.	1
Management capability in handling change	'Managers in this organisation are effective in leading staff through change.' Use 5 point Likert scale of response where 1= very effective and 5 = very ineffective.	Organisations are likely to be experiencing significant restructuring in the wake of financial crisis and understanding the role that workplace practices can play in helping managers to do this may be important to develop suitable policy support to improve collective European business performance in this area.	1
Organisational capacity to innovate	'This organisation has launched a product and/or service in the past three years which it did not previously provide.' Response: yes/no.	Innovative capacity may be important for economic recovery and analysing links between workplace practices and performance of such organisations may be important to develop suitable policy support to improve collective European business performance in this area.	2

Topic area	Proposed new question	Rationale for recommendation	Priority rating (scale 1–3 where 1 = high and 3 = low)
Financial turnover	'How has the total amount of goods or services produced in this establishment changed in the past three years?' Responses: Increased by over 5%, decreased by over 5%, stayed approximately the same.	Obtaining a measure of financial performance using scaled data may be helpful for undertaking organisational performance analysis.	1
MM157	Replace response _01 with a new question: 'What percentage of total working days at this workplace has been lost due to employee sickness absence in the past 12 months?' Response range: none, 1–4%, 5–9%, 10% or more.	Obtaining scaled data on sickness absence enables a less subjective estimate of this employee outcome to be made and will facilitate more accurate analysis of organisational performance.	1
MM157	Replace response _04 with a new question: 'What is the annual voluntary staff turnover rate at this establishment?' Response range: under 5%, 6–10%, 11–15%, 16–20%, more than 20%.	Obtaining scaled data on voluntary staff turnover enables a less subjective estimate of this employee outcome to be made and will facilitate more accurate analysis of organisational performance.	1

Table 17: *Recommendations for additional questions for the ECS employee questionnaire*

Topic area	Proposed new question	Rationale for recommendation	Priority rating (scale 1-3 where 1= high and 3 = low)
Management and leadership	'How good would you say managers are at seeking and responding to employees' views when implementing workplace change?' Use 5 point Likert scale of response where 1 = very good and 5 = poor.	Management and leadership capability is a key component of embedding HPWPs and best sought through the subjective judgement of employee representatives or employees.	1
Training	'What proportion of employees have received sufficient training to be able to do their current job?', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Provides a check on adequacy of training provision compared to management survey.	3
Performance appraisal	Add question taken from Meadow survey: 'Approximately what percentage of employees has a performance appraisal or evaluation interview at least once a year?', with responses of 'none, 1% to 24%, 25% to 49%, 50% to 74% and 75% or more'.	Assessment of employee performance is integral to all theories of HPWP and included in most existing surveys – this question provides the opportunity to verify management survey response.	2
Line management	'Line managers are generally effective in guiding, motivating and supporting employees in their jobs.' Use Likert scale of 1–5 response, 1 = strongly agree to 5 = strongly disagree.	Recent literature on HPW has shown the key role of line managers in embedding workplace practices and this is therefore a critical area of question development.	1