The Adoption of High Performance Human Resource Practices in Ireland: An Integration of Contingency and Institutional Theory

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ABSTRACT

Advocates of the high-commitment or high-performance model of HR practices (HPHR) argue that this model is universally 'best', as it exhibits the potential to outperform all other models of HPHR practice (Appelbaum and Batt, 1994; Pfeffer, 1994). Some studies indeed support this claim, indicating a positive effect of these practices on performance indicators such as productivity and quality (for example Arthur, 1994; Ichniowski, Shaw and Prennushi, 1995; Kalleberg et al., 1996). If these practices are even partially as effective as they are claimed to be, then they should be of great appeal to a wide array of companies. Yet rather than a rapid diffusion, an increasingly routine finding is that the take-up of these practices appears to remain low (Wood and De Meneze, 1998; Roche, 1999; Osterman, 2000; Cappelli and Neumark, 2001).

To explain this apparent reluctance in HPHR adoption, two prominent issues are considered: first, the contingency literature highlights the role of strategic integration, which sees one area of company activity, say HR management, being influenced by and reflecting the goals of another, for example, the company's business and/or production strategies (Schuler and Jackson, 1987; Arthur, 1992; MacDuffie, 1995, Wood, 1999); second, a principal assertion of the neo-institutionalist perspective is that under conditions of high uncertainty the assumption that companies are predominantly guided by efficiency concerns can be misplaced (Meyer and Rowan, 1977; Haunschild and Miner, 1997; Shaw and Epstein, 2000). For example, in the early stages of diffusion, the effectiveness of new practices is as yet, for many companies, unclear. Under such circumstances, these companies are more likely to be reluctant to adopt HPHRs.

In this article, we present a theoretical approach that integrates both the contingency and neo-institutional perspectives. The model depicts the process of HR institutionalisation as an unfolding process, in which the diffusion of HPHR practices takes place in two stages. An early stage depicts the decision by certain companies to adopt HPHR as being guided primarily by efficiency goals. This early stage is considered to drive the institutionalisation of these practices. A later stage depicts another group of companies who, as rational imitators of the early adopters, are willing 'to jump on the bandwagon'. Here a central hypothesis is that companies mimicking the HR activities of others will washout or water down the effects driven by 'efficiency' concerns.

The models are tested in the cross-section using data from a recent company survey on human resource and work organisation practices in the Republic of Ireland. The article outlines the results of the data analysis: the data confirm the contingency component of the model as well as provide support for the expected interaction between companies' efficiency goals and mimicking activities on HPHR use.

INTRODUCTION

Increasingly, scholars agree that the strategic management of human resources is an important means to gain that all-important 'competitive edge'. Although the definition of strategic HPHR differs between studies (Becker and Gerhart, 1996), they all have in common the idea that a bundle of human resources practices such as, training programmes, incentive systems, selectivity practices, sharing arrangements and practices, that enhance communication and integration, improve employee and company performances.[2] Empirical evidence from the US suggests that strategic HPHR practices exhibit substantial 'bottom line' effects (for example Huselid, 1995; MacDuffie, 1995; Delery and Doty, 1996; Ichniowski et al., 1997; Huselid and Becker, 1997; see also Wood, 1999). These performance effects are attributed to the mutually reinforcing or complementary relationship that exists between HPHR practices. These findings suggest that companies can make a substantial difference to their operations by adopting HPHR and, on the face of it, one would therefore expect companies to adopt the full complement. But empirical evidence suggests that this is not necessarily so. First, it appears that the take-up of these strategic HPHR practices among companies has been modest (Osterman, 2000; Cappelli and Neumark, 2001; Wood and De Menezes, 1998 for the UK). Furthermore, rather than the full-complement of HPHR being the norm of adoption, empirical studies repeatedly find hybrid forms of HPHR, i.e. forms that are comprised of a mixture or a selection from, rather than the full set of HPHR (Arthur, 1992; MacDuffie, 1995; Ichniowski et al., 1997).

These results are mirrored by the Irish discussion. On the one hand, companies in Ireland that adopt the high-performance HR bundle exhibit better performance in terms of job performance and employee discipline and product quality and innovativeness (Horgan, 2003). In spite of the costs associated with this HR approach, these companies tend also to have better performance in

terms of profitability and market share (Horgan, 2003). On the other hand, the diffusion of these practices in Ireland appears to be somewhat limited (Gunnigle et al., 1994; 1997; Geary, 1999; Roche, 1999; Roche and Geary, 2000). Moreover, there are only a few indications that these practices are applied in a systematic fashion (McCartney and Teague, 2001; Geary and Roche, 2001). Most of the companies using HPHR practices appear to adopt them sporadically rather than systematically (Horgan, 2003).

The Irish discussion of the adoption and diffusion of these practices has mainly dealt with two issues: first, it has been examined whether these practices are more prevalent in new and non-unionised establishments where managerial discretion may not be constrained by established patterns of personnel management and collective agreements (Gunnigle et al., 1998; D'Art and Turner, 1999; Roche, 2001); second, the role of the multinationals in the diffusion of these practices has been scrutinised (Turner et al., 1997; Geary and Roche, 2001; Roche, 2001; Turner et al., 2001). With respect to both issues the data have been inconclusive and the findings controversial.

In this article, we focus on a different issue of the diffusion process of HPHR practices. According to the internal fit perspective, these companies appear to be opting for a form of HPHR that exhibits a limited performance complementarity potential. If the key "high performance" ingredient of the full HPHR complement is a high degree of internal consistency, why is it that companies nevertheless choose less than the full HPHR complement? In this article, we sketch a simple model of the diffusion of HPHR practices that explains why, despite this set being inferior in terms of performance implications, some firms would nevertheless adopt a selective rather than a full HPHR set. We distinguish between two stages of diffusion. In the first stage, HPHR entrepreneurs induce pioneering companies to implement HPHR as their human resource strategy. Only companies for which HPHR promises to yield substantial performance benefits will buy-in at this stage. As contingency theory would predict, those companies whose business strategy matches HPHR will be early adopters. In the second stage, another group of companies, as rational imitators of the early adopters, are willing to jump on the bandwagon. By adopting HPHR, the early-adopter has not only reduced the highest uncertainty associated with the new HPHR activity, but thanks to their performance success, this adoption has also earned HPHR considerable prestige and status. It is suggested that under such conditions, despite the lack of a technical or efficiency rational, companies are expected to find the reputation gains that HPHR have accrued over time to be a desirable attribute for their company's operations. Finally, the model outlines how the motivations of these two types of company can result in different forms or versions of HPHR being chosen.

In the first part of this article, this diffusion model is developed. In the second part of the article, empirical hypotheses derived from the model are tested using cross-sectional data from a recent survey among companies in Ireland. The discussion and summary of the model and the empirical findings conclude the article.

A MODEL OF THE HPHR DIFFUSION PROCESS

In order to understand how organisational practices such as HPHR disseminate, a useful approach is to construct a general model, which, by abstracting from historical contingencies, can examine the common mechanisms that underlie many diffusion processes. In this article, we develop such a model in an informal fashion. This model depicts the process of HR diffusion as an unfolding process that takes place in two stages. The early stage depicts the decision by certain companies to adopt HPHR as being guided primarily by efficiency goals. During this early stage, the reputation of these practices is established. The later stage depicts another group of companies who, as rational imitators of the early adopters, are willing 'to jump on the bandwagon' in order to signal their status as high performers.

Early Diffusion Stage

The adoption decision of innovative organisational practices such as HPHR can be understood as a rational decision where managers trade-off the costs and benefits of adopting HPHR. In particular, during the earliest stages of the diffusion of innovative organisational practices, the rationality of the adoption decision is limited by considerable information deficits. Managers are expected to be unfamiliar with these HR practices, their understanding of the potential contribution that these practices can make to their company's performance is expected to be poor and they are expected to lack the training and knowledge to implement and 'run' these practices. The problem thus far is that potentially interested companies are not sufficiently informed or motivated to consider the HPHR option. In the early stages of the diffusion process of organisational practices, the unawareness and uncertainty regarding the related costs and benefits are substantial obstacles to be overcome (Rogers, 1995). Hence if the diffusion process is to advance, the involvement of an actor to make a critical intervention is needed: these circumstances require an actor who has a structured entrepreneurial goal, one that is prepared to actively define, justify and push the strategic value of new forms or sets of practices (DiMaggio, 1988; Clemens, 1993).

In recent decades, the role of the HR profession has developed such an entrepreneurial profile. The focus of the HR profession has increasingly been to achieve a high status within companies. In doing this, its formula has been to offer its skills, knowledge and competency as a crucial service to companies. The profession's claim has been that effective HR management makes a substantial difference to the company's 'bottom line' and thus to its ability to compete. In advancing the profession's claim, HPHR features as the decisive HR solution. Consequently, the HR profession as a collective actor has been willing to develop the concept of HPHR as a form of strategic human resource management, it has acquired the competency to implement this HR system and has actively promoted its adoption among companies. The HR profession, however, does not exhibit the status or power to make the final decisions regarding HPHR adoption.

During the earlier stage of the HPHR diffusion process, the risk involved in implementing the practices, despite the entrepreneurial efforts of the HR profession, is nevertheless high and companies are therefore understandably reluctant to adopt. The relative newness of the practices means that companies cannot gain from the success or failure experiences of other companies. This begs the question which type of company will be willing to bear such risk. Only those companies that perceive a considerable gain to be made from adopting HPHR will do so. A useful starting point to understand which companies will gain most by adopting a HPHR strategy is to examine the extent of fit that can be achieved between the company's competitive strategy and HPHR (i.e. question of external fit). The company's ability to sustain profitability in the face of competition depends upon how well the company implements its 'competitive strategy'. We proceed from Porter's distinction between two alternative competitive strategies – the cost minimisation and differentiation strategies (Porter, 1980; 1985).¹ These strategies require very different HR inputs (Arthur, 1992).

Firms can compete on the basis of low cost and being a low-cost producer in its industry. A firm engaging in cost reduction is one that claims its market position by undercutting the price at which its rivals can bring their product to the market. Depending upon the extent of commitment to being a cost-leader, the sources of cost advantage will vary; one source of advantage will be to focus on bringing a 'no-frills' product or service to the market. This requires reliable yet uncomplicated production technology and basic work production arrangements. As production techniques are well specified, relatively narrow and routine, the necessity for a sophisticated labour input is minimal. All in all, this approach demands little by way of initial training, little if any technological change and the costs related to the development of employee involvement needs are negligible (Arthur, 1992).

Alternatively, the firm can strive to be relatively unique in its industry along a dimension that is valued greatly by the customers of its product or service. This can imply emphasising the uniqueness of the product itself, the delivery system through which it is sold, the marketing approach or even by focussing on providing a particular product to a 'niche' market. The differentiator's quest to reflect the demands and changes of market conditions will rely strongly on its capacity to be innovative and flexible (Porter, 1980). To this end the human resource input will be a decisive part of delivering a high degree of employee expertise, skill, flexibility and the levels of creativity that are essential for high innovation. As a particular premium is placed on preparing and motivating employees to apply a much-needed 'smart' and high work effort, the company will need to establish a culture distinguished by norms of hard work and co-operation.

For the differentiator, high levels of HR input are required to deliver a favourable company performance outcome and it is this keen interest in stimulating employee performance that is expected to persuade the differentiator to adopt at the early diffusion stage: for example, from the recruitment stage, the

procedures and practices implemented by the company when screening and selecting candidates will help to identify those who exhibit the knowledge, skills, experience and work attitudes that are considered desirable by the company. After recruitment, HPHR can continue to play a decisive role: through its role in training, compensating and promoting employees, HPHR co-ordinates the human resources that will be required for the firm to achieve this. The attraction of HPHR for the differentiators lies in its potential to reach all aspects of the company – from production, development and design to the marketing, distribution and sales of the firm's product or service. If HPHR delivers its potential, the advantages to be realised for the differentiator renders the early mover strategy not only an innovative but also a highly competitive activity. For companies pursuing a cost minimisation strategy, in contrast, HPHR is most likely to be regarded as fanciful promulgations! For these companies, HPHR does little more than increase labour costs with little or no promise of returns in terms of an enhanced productivity.

Later Diffusion Stage

Many diffusion processes result in an S-shaped diffusion curve. After an initial stage of slow adoption, the rate of adoption then rapidly increases. Later when a substantial share of the population has adopted the innovation, the rate of adoption decreases continuously. Hence the number of adopters per time unit approaches a normal curve resulting in the familiar S-shaped curve of cumulative adoption. This typical pattern resembles many epidemiological processes and a mechanism similar to contagion, such as the spread of information via a network, has been invoked to account for this shape (Coleman, 1966; Burt, 1987; Valente, 1994).

In the case of HPHR, we assume that such a process of interaction-based imitation is not necessarily the most important one. The number of previous adopters can affect the likelihood of current HPHR take-up in ways that do not presuppose direct contact between early and late adopters. For example, population ecologists studying the development of organisational forms (Hannan and Freeman, 1989; Hannan and Carroll, 1992) and organisational practices (Ahmadjian and Robinson, 2001) have pointed to a recurring pattern of the 'legitimacy' of organisational forms and practices increasing as a function of previous adoption. This legitimacy facilitates access to valuable resources that permits the further growth of the population. For the spread of HPHR we assume that a similar process of reputation building accounts for both an increase in the diffusion speed in this later stage as well as for the emergence of hybrid types that are characterised by the selective take-up of HPHR practices.

When the effects of practices or technologies are poorly understood, copying the example of other, successful companies provides a good, low-cost heuristic for finding a valuable solution (March and Olsen, 1976; Haunschild and Miner, 1997). However, this mimicking of successful companies is not only rational as a search heuristic but the ideas and beliefs about HR practices can secure a 'legitimate' status which brings also benefits other than those arising

from a HR-business strategy fit. For example, Westphal et al. (1997) found that companies using the same practices as others improve the company's general reputation, as evidenced by the ratings of a national accreditation organisation. During the early stage of diffusion, HPHR becomes associated with both improved employee and company performances and thus earns a favourable reputation. Based on the success of early adopters, HPHR becomes recognised in the wider business community for being a successful and innovative approach. An example of how this occurs can be seen when one considers how the early adopters' experience with HPHR is evaluated by institutions whose influence is widely felt in the business community, i.e. lending institutions and other larger companies (e.g. as customers). As an important financial resource, the evaluations of these institutions are very serious for companies (for example, as a source of advice, the company is eager to incorporate its recommendations). Banks, having observed early adopters and their success with the use of HPHR means that these practices become associated with being the practices of productive companies and evaluated as practices that promote company performance. Consequently, companies that resemble early adopters will be most likely to be classified as belonging to the 'prosperous' set and thus become serious contenders for financial support. Regardless of the actual potential of HPHR for non-differentiator companies, the success of early adopters is noted and evaluated by significant observers as 'best practices'. With such 'signalling' value for banks and other resource points, all companies using HPHR can gain from the increased reputation effect. As Shaw and Epstein (2000) have shown, the reputation of companies and management can be enhanced by the adoption of popular management techniques even if they do not make substantial economic contributions. Hence HPHR becomes valuable to the company in a way that is quite different from benefits derived from the HR-business strategy fit. Once the experiences of early adopters become dissipated, later adopters will look to 'best practices' in order to avoid the reputation of an out-of-date, old-fashioned or fading company.

Low differentiators, not relying on a differentiator-HR input fit, lack any incentive in the early stages to adopt HPHR. But as the practices acquire a 'best practice' effect for all companies, benefits can be gained by now jumping on the bandwagon: adopting the latest and most innovative of HR techniques is likely to be met with the seal of approval and to evoke confidence as it indicates a high management quality. Thus, in the later stage, the profile of adopters will be less characterised by a differentiation strategy as low differentiators now also adopt in order to reap the reputation benefits of HPHR adoption.

Studies on the relationship between types of HPHR and performance have shown that the adoption of the full set of HPHR practices is necessary to gain substantial performance improvements (Ichniowski et al., 1997; Horgan, 2003). This is because these practices are mutually reinforcing and supportive. Lacking these complementarities, the take-up of single practices or of a selective set of the practices, does not yield significant performance effects. As a consequence it is expected that companies either adopt the full set of HPHR practices or they do

not adopt at all. This theoretically expected bi-modal distribution of HPHR has not been substantiated empirically; rather, there appear to be companies that opt for some in part substantial HPHR investment, but without adopting the full set of HPHR practices. This selective take-up could be a rational, profit-maximising strategy for those companies for which the performance implications of HPHR are secondary. If the selective set of HPHR practices is sufficient to secure reputation gains, 'reputation seeking' companies may opt for a selective set that requires less investment and commitment than the full set: when organisational practices are adopted for this signaling value these practices can be seen as operating as a type of façade which leaves the internal workings of the company largely untouched (Meyer and Rowan, 1977; Meyer, 1979).

To recapitulate the model, in the early stage of HPHR diffusion, lack of awareness and information prove to be the principal obstacles to the take up of these practices. The intervention of actors such as the HR entrepreneurs, having high stakes in ensuring that these practises are diffused, proves to be crucial to promoting the concept of HPHR among companies. However, even if aware of the HPHR option, only companies that have the resources to bear the costs and risks of HPHR adoption and that will benefit greatly from the potential gains of HPHR will adopt these practices. Since HPHR is expected to improve the motivation, commitment and skill of the workforce, HPHR is of particular value to companies pursuing a 'differentiation business strategy'. Companies pursuing a cost minimisation strategy, however, reject the HPHR option. Hence we expect that:

- in the early stage of HPHR diffusion, companies that pursue a differentiation strategy are more likely to adopt HPHR;
- in the early stage of HPHR diffusion, contact with HR profession will strengthen the disposition of 'differentiators' to adopt HPHR;
- companies pursuing a cost minimisation strategy are unlikely to adopt HPHR.

As a result of the success of early adoption, the rate of diffusion increases in the next stage. Although 'differentiators' will still comprise the lion share of HPHR adopters, the ongoing process of the institutionalisation of the strategy also brings with it incentives for those companies less dependant on employee input, to adopt the strategy. Having earned the reputation of being innovative and performance enhancing, HPHR becomes a signal of company success and competitivity for outsiders with a limited knowledge of a company's capabilities. Even companies that do not have an 'efficiency rationale' will adopt HPHR in order to enjoy the reputation gains.

These companies do not, however, necessarily require the full HPHR set. Because outsiders have only a limited insight into the company's activities, a selective set of highly visible and fashionable practices and a less consistent application may be sufficient to convince such outsiders of the 'high performance' nature of the company.

- In the later diffusion stage, the relationship between differentiation and HPHR adoption will weaken.
- In the later diffusion stage, differentiation companies will adopt a full-version of HPHR and non-differentiators will adopt a 'selective' version of HPHR.

This model describes a diffusion process that develops over time. A rigorous test of this model would require longitudinal data and preferably panel data. However, provided that the HPHR diffusion process has progressed beyond the early stages, the model also permits the derivation of hypotheses that can be tested cross-sectionally. In the next section, we introduce the data used to illustrate the model as well as outline the operationalisation of key concepts. Cross-sectional hypotheses will be developed in the subsequent section.

Data and Operationalisation
The data used to test the hypotheses were obtained from the Careers Management 2000 survey in Ireland. This data were collected during July–October 2000 as part of an ongoing international study on human resource and career management practices, by the Interuniversity Center for Social Science Theory and Methodology (ICS), University of Groningen in co-operation with the Institute of Interdisciplinary Management, London School of Economics (Horgan, 2003). A detailed questionnaire covering a range of human resource practices was sent to senior management/human resource offices in companies in manufacturing and services industries of the Republic of Ireland. The initial mailing was followed up with the sending of a reminder letter (for details of the data-collection procedure, see Horgan, 2003). A total of 81 usable questionnaires from companies with 50 plus employees were returned. The survey response rate of 9 per cent is somewhat below the average of some other postal surveys. This response rate is, however, within the range that is typical for international studies with this data collection method (for example, Harzing, 1997) and considering that the questionnaire used was of substantial length. A comparison of the size and industry composition of the sample with the targeted population, with the Census of Industrial Production (only manufacturing) (CSO, 2000) and with the targeted population of the larger Cranet E. Survey of 1995 (Heraty and Morley, 2000) gave no indication of response bias (Horgan, 2003).

Key Concepts
HPHR
HPHR is operationalised by the extent to which companies use the following practices:
1. **Incentives**: this refers to the importance of performance and skill in determining the compensation and promotion opportunities given to core employees.
2. **Training**: the extent to which firms provide in-house or external training to their core employees.

3. **Selection**: the extent to which companies apply rigorous selection criteria in the recruitment and promotion of their core employees.
4. **Guidance**: the extent to which companies provide core employees with guidance and support in the development of their jobs and careers
5. **"Gifts"**: the level of pecuniary and non-pecuniary benefits provided by a company to its core employees.

Types of Adoption

In the model outlined above, a distinction has been made between three types of HPHR adoption: *non-adoption*, adoption of the *full HPHR* set and adoption of a *selective HPHR* set. Using cluster analytical methods, Horgan (2003) demonstrated that companies in Ireland apply three generic types of HPHR. One type sees each of the HPHR practices extensively. These companies are considered to be *full adopters* of HPHR. A second group of companies invest in many, but not all, of the HPHR practices. These are referred to as the *selective adopters*. The third type is characterised by their remarkably low use of HPHR practices. We regard these to be *non-adopters*. Eleven companies are full adopters (13.6 per cent), 34 companies are selective adopters (42 per cent) and 36 companies are non-adopters (44.4 per cent) (see Appendix for details).

Business strategy: In operationalising the business strategy the widely applied typology developed by Porter was followed (1985). As elaborated upon earlier, according to this typology, companies compete either by becoming the lowest cost producer of a product or service (cost-minimisation strategy) or by differentiating themselves from other competitors on the basis of product quality or innovativeness (Differentiation strategy). We adapted the instrument suggested by Dess and Davis (1984) to measure these different business strategies (see Appendix for items and psychometric attributes).

HR exposure: The data unfortunately do not contain elaborate measures of the degree of exposure to the HR profession such as the extent of integration of HR networks etc. As a proxy for this we use the status of HR management in the company as measured by the involvement of HR management in decision-making and the position of the HR manager in the company hierarchy (see Appendix for specific item details).

Company co-orientation: Since the data are cross-sectional, time-dependent aspects can only be measured indirectly. In the model, it is assumed that the successful implementation of HPHR leads to reputation of HPHR as 'best practices' and transforms HPHR partially into a signal of innovativeness and management capability. We use the degree of company co-orientation as an indirect measure of a company being in the second stage of HPHR diffusion as it captures the degree of exposure to the reputation of HPHR practices. Companies with a high co-orientation (i.e. that benchmark their HR activities, that orientate themselves towards presumed best practices and that are, in general,

aware of the HR management of other companies) are more likely to be reputation sensitive than other companies when determining their HR strategy (see Appendix).

Empirical Hypotheses

For those companies that pursue a differentiation strategy and hence are most dependent on a high-quality human resource input, HPHR will be most beneficial to their operations in terms of performance. Regardless of whether they adopt HPHR in the early stage or wait until the beneficial effects become evident, these differentiators will in each case choose to adopt the full set in order to realise the complementarities among the HPHR practices. Hence, we expect:

The more a company is committed to the use of a differentiation strategy, the more likely the company will adopt the full set of HPHR practices.

In contrast, the competitive advantage of companies that follow a cost-minimisation strategy relies on minimising the costs of products of moderate quality and sophistication. Consequently, these companies will be reluctant to take on the extensive investments required for the implementation of HPHR. Hence, we expect:

The more a company is committed to the use of a cost-minimisation strategy, the less likely the company will adopt HPHR practices.

That HPHR has earned a favourable reputation during the later stage means that companies are now provided with a new reason to consider HPHR adoption. As a consequence, the adoption rate is expected to increase in the second stage. Companies with a high co-orientation are more receptive to the promise of acquiring the legitimacy and status associated with the use of HPHR. Thus we expect:

The higher the co-orientation of a company, the more likely the company will adopt either the full or the selective set of HPHR practices.

Particularly in the first stage of the diffusion process the promoting activities of the HR profession are necessary to induce differentiator companies to bear the risk involved in HPHR adoption. The increased adoption probability in the initial stage by differentiation companies that have strong HR connections, accounts for a higher share of these companies being among the adopters for most of the diffusion process. Hence we expect in the cross-section that:

The more exposure a company has to the HR profession, the stronger the relationship between differentiation and full adoption will be.

The adoption of selective sets of HPHR practices was explained by the model as being a strategy by companies to capture the reputation benefits of HPHR

adoption but have little interest in the performance effects that are associated with the full set of HPHR. The adoption of the selective set of HPHR is therefore expected to be most likely among reputation-seeking companies with little commitment to a differentiation strategy. Thus:

Companies that combine a high co-orientation with a low commitment to a differentiation strategy will predominately adopt the selective set of HPHR practices.

Econometric Specification

The appropriate regression model for multiple qualitative outcome variables with individual (i.e. company) attributes as predictor variables is the multinominal (or generalised) logit model (Greene, 2000: 859–62). The estimated equations provide a set of probabilities for the three adoption modes of the companies with attributes xi. When j=0 is full adoption (the reference category), j=1 indicates non-adoption and j=2 represents selective adoption, the probabilities are:

$$\Pr(Y = j) = \frac{e^{\beta_j x_i}}{1 + e^{\beta_1 x_i} + e^{\beta_2 x_i}} \text{ for } j=1,2,$$

$$\Pr(Y = 0) = \frac{1}{1 + e^{\beta_1 x_i} + e^{\beta_2 x_i}}.$$

The marginal effects of the characteristics on the probabilities are
$$\partial_j = \Pr_j[\beta_j - \overline{\beta}],$$
i.e. the probability of outcome j times the difference between the estimate for j and the average estimate for j=0 to 2.

Beside the company attributes for which hypotheses have been formulated a vector of controls for company heterogeneity has been added. This vector includes company size (logged), company age (logged), percentage of unionised employees and sector dummies.

Results

Table 3.1 reports the results of two multinominal regressions of the three types of human resource system adoption. The full adopters of HPHR are the reference category. The first part of each model contrasts full adopters with non–adopters (1=non-adopters 0=full adopter). The second part of the models contrasts the full adopters with selective adopters (1=selective adopters 0=full adopters). The first model contains only main effects. The second model incorporates the relevant interaction effects. The first three hypotheses relate to the main effect model. The second model treats the next two hypotheses regarding interaction effects. Table 3.2 reports the marginal effects of the variables of interest.[4]

Table 3.1 Multinomial Regression of HR Resource System Adoption

| | Model 1 | | | | | Model 2 | | | | |
| | Low | | Selective | | | Low | | Selective | | |
	ß	S.E.	ß	S.E.	x^2	ß	S.E.	ß	S.E.	x^2
Intercept	3.07	1.72	3.85	1.66	7.1	2.96	1.74	3.85	1.67	6.8
Process industry	.61	1.32	-.22	1.39	1.0	.83	1.36	-.41	1.41	2.0
Food & misc. industry	-.06	1.06	-2.14	1.36	4.7*	-.09	1.13	-2.17	1.43	4.4
Service industry	.10	.37	.40	.35	3.1	.09	.39	.43	.37	3.6
Log size	-.57	.36	-.54	.33	3.3	-.58	.37	-.61	.34	3.7
Log age	.41	.44	.34	.45	0.9	.37	.46	.38	.47	.08
Unionisation	1.07	1.13	-.33	1.15	3.4	1.22	1.17	-.41	1.19	4.2
Cost minimisation	.63	.47	.21	.40	2.3	.69	.49	.25	.42	2.4
Differentiation	-.87	.57	-.44	.54	2.9	-.62	.77	-.04	.81	2.7
HR exposure	-.28	.48	-.48	.46	1.4	-.01	.68	-.39	.68	2.5
Co-orientation	-.82	.55	-.19	.56	4.7*	-.97	.64	-.19	.65	7.3**
HR prominence x differentiation						-1.00	.69	-.23	.60	3.5
Co-orientation x differentiation						.26	.67	-.52	.68	3.8
x^2 (df) (p)	39.8 (20) (.005)					44.5 (24) (.007)				
McFadden R^2	.246					.276				
n	80					80				

* p<.05   ** p<.01   *** p<.001

The first hypothesis derived from the model is that a higher differentiation score is associated with an increased probability of full adoption. The estimate (NA) indicates a positive relationship between differentiation and full versus non–adoption. This estimate is weakly significant (p=.062). Differentiation is also positively related to full adoption when compared with selective adoption although the estimate is not significant (bSA; p=.21). These point estimates translate into the following marginal effects: a one–unit increase in differentiation results in an increase in full adoption by 7.3 per cent points while the percentage of non–adopters diminishes by 8.7 per cent.

The second hypothesis is that a higher cost minimisation score will increase the probability of non-adoption. The relevant parameter estimates are in the expected direction (bNA; bNA – bSA). The estimate of the regression of non–adoption is weakly significant (p=.092); as an additional logistic regression on selective versus non-adoption showed, cost minimisation also discriminates weakly significantly (p=.098) between these two types (not reported). The point estimates imply that a unit change in cost minimisation accounts for about 15 percentage points more non–adopters (selective adopters 10 per cent less selective adopters, 5 per cent less full adopters).

The third hypothesis states that company co-orientation will increase the likelihood of both selective and full adoption. The estimates are in the expected direction. As far as the contrast between non- and full adoption is concerned, the estimate is weakly significant ($p=.067$). For the contrast between non-adoption and selective adoption, the estimate is even significant ($p=.049$) as was demonstrated by an additional logistic regression between these two types (not reported). A unit change in company co-orientation increases the number of full adopters for about 6 percentage points and the number of selective adopters for about 7 per cent.

Table 3.2 Marginal Effects (approximately; Δp)

	Non-Adopters	Selective Adopters	Full Adopters
Model 1 (Main Effects)			
Cost minimisation	.154	-.101	-.053
Differentiation	-.087	.013	.073
HR prominence	.013	-.057	.044
Co-orientation	-.130	.071	.057
Model 2 (Interaction Effects)			
Cost minimisation	.170	-.118	-.049
Differentiation	-.120	.086	.034
HR exposure	.020	-.111	.081
Co-orientation	-.169	.097	.062
HR prominence x differentiation	-.183	.118	.062
Co-orientation x differentiation	.156	-.157	.001

The fourth hypothesis is that the prominence of a HR department reinforces the relationship between full adoption and differentiation. In accordance with this expectation the estimate for the product term between HR prominence and differentiation is negative and weakly significant ($p=.073$) for the comparison between non- and full adopters. Moreover, the estimate for this product term for the comparison between selective and full adoption is also negative, but as expected, it is more so for the comparison between non- and full adoption. The effect of differentiation on full adoption increases thus by about 6 percentage points by a unit change in company co-orientation. A simultaneous unit change of differentiation and company co-orientation increases the incidence of full adoption by almost 18 percentage points ($.062+.081+.034$).

The fifth hypothesis states that company co-orientation reinforces the negative effect of differentiation on selective adoption. In accordance with these expectations, the odds of selective versus full adoption are decreased (although the estimate is insignificant: $p=.23$) and the odds of non- versus selective adoption are even significantly decreased ($p=.031$; additional logistic regression). However, the odds of non- versus full adoption increase slightly. These point estimates imply a one-unit decrease in differentiation substantially changes the effect of company co-orientation on the selective adoption of HPHR, by almost

16 percentage points. A unit increase of company co-orientation combined with a unit decrease in differentiation results in a 17 per cent higher probability of selective adoption (.097-.086+.157). The results, however, also indicate that the effect of differentiation and co-orientation on full adoption is only additive, summing up to almost 10 percentage points (.034+.062+.001).

DISCUSSION

Despite the fact that, increasingly, evidence suggests that HPHR has a substantial impact upon company performance, it appears that the take-up of these practices is nevertheless limited. Moreover, although evidence points to the full version of HPHR being the most effective, the pattern of use among companies suggest that hybrid forms of HPHR are also prevalent. In this article a model of the diffusion of HPHR that can explain these stylised facts was developed. In this model, two stages of diffusion are distinguished: the first sees diffusion of HPHR being driven primarily by efficiency considerations. Here, companies pursuing a differentiation strategy find HPHR most promising for their operations and are thus willing to bear the risk of adopting what, at this stage, are relatively unknown practices. The successful adoption of these pioneering companies sets the stage for the second wave of take-up. Increasingly HPHR becomes associated with astute company practice. Furthermore, its use becomes a signal of the quality and innovativeness of company management. Consequently, companies that were before now unconvinced, at this stage find merit in the benefits to be gained from the favourable reputation of these practices. Not being in the position to make use of the full system, however, these companies opt rather for a more selective HPHR version.

Like many sociological diffusion models, this model rests on the assumption that adoption rates of innovative practices are a function of the degree of diffusion (i.e. the number of previous adopters). However, this model combines the economic idea of profit maximisation and the sociological idea of an institutionalisation process in a novel manner. While economic models generally assume that either the costs of innovations decrease due to economies of scale or that the use value of the innovation increases with the number of previous adopters due to network externalities, sociological models argue that a substantial number of previous adopters induce other firms to follow their example.

Furthermore, this model yields a number of non-trivial implications. First, the model suggests that the relationship between HPHR and performance follows a U-shaped curve over time. In the early stage, the performance outcomes are expected to improve over time as differentiation companies learn how the practices can be best implemented and combined for optimum results. In the second stage, the performance outcomes are expected in the aggregate to deteriorate as reputation-seeking companies jump on the bandwagon. This has as a consequence that the average match between business strategy and HPHR is less optimal. Second and related to the previous point, the predictability of adoption also follows a U-shaped curve with time. Throughout the early stage, the relationship between differentiation and HPHR adoption strengthens due to the

increasing number of differentiation companies that adopt these practices. Once the reputation benefits become apparent, the profile of adopters becomes less clear as the motivation to adopt becomes more heterogeneous. A third implication of the model is that various forms of HPHR take-up are expected to emerge over time: while companies in pursuit of the employee performance potential of HPHR are expected to embrace the *full* HPHR system, the less extensive *selective* HPHR system is expected to be taken on by reputation seekers. Finally, the model can be easily extended to account for 'fads' or hypes in human resource management: The high degree of diffusion in the second stage can be seen as a temporary popularity of the practices that will not last. In a third stage of the model, when the weakened association of HPHR with performance and management capability becomes apparent and the signal value of HPHR fades, a substantial number of companies are expected to jump off the bandwagon.

Using cross-sectional data from a recent survey among Irish companies, some hypotheses derived from the model were tested empirically. The first set of hypotheses concerns the impact of a company's business strategy on HPHR adoption. Support was found for the hypothesis that companies pursuing a differentiation strategy are likely to adopt the full range of HPHR practices as well as for the hypothesis that companies emphasising cost minimisation as the principal component of their business strategy are reluctant to invest in HPHR. The exposure to previous adoption was measured by a company's co-orientation to the activities of other companies. Here we found in accordance with our expectation that co-orientation is associated with both full and selective HPHR adoption. Further, the data evidenced that companies that combine a strong co-orientation with a low degree of differentiation predominately adopt a selective version of HPHR. Thus the data provide support not only for the roles played by efficiency and interdependence in HPHR adoption but also confirm that these processes are not independent of one another. The empirical study also has its limitations. In the first sample in particular the number of full adopters is relatively small, limiting the significance of the results. More importantly, a rigorous test of the model would require longitudinal data about HPHR adoption. The data and the empirically tested hypotheses pertain to the cross-section.

2. Less clear, however, is whether employee welfare, in particular the quality of working life, are also enhanced by this human resource approach (see Osterman, 2000; Appelbaum et al., 2000 for the US; Ramsay et al., 2000 for UK; Godard, 2001 for Canada).

3. Although a number of typologies have been developed to describe companies' business strategies, that developed by Michael Porter (1980; 1985) is arguably the best known and is widely used by both business policy and industrial relations (Hambrick, 1983, Dess and Davis, 1984; Miller and Friessen, 1986; Kochan, Katz and McKersie, 1986; Sorge and Streeck, 1988; Arthur, 1992).

4. The marginal effects have been calculated using the approximation: $Dp=p$ $(1-p)b$ for the calculation of the change in the conditional probability. From the conditional probabilities, probabilities have been determined using Bayes rule.

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APPENDIX

In the human resource literature, hierarchical clustering is the most common technique used to derive bundles or types of different human resource management (for example, Arthur, 1992; MacDuffie, 1995; Ichniowski et al., 1997). Using the five dimensions, a two-stage clustering procedure that combined hierarchical clustering with a k-means clustering procedure was conducted. Hierarchical clustering was used to profile the cluster centres and to identify any obvious outliers. In order to optimise the clusters, the cluster centres identified by the hierarchical method were then used as the initial seed points in a k-means clustering procedure. This combination helps to avoid the weakness of k-means clustering where the iterative algorithm becomes 'stuck' in a local minimum. Ward's method was chosen as the hierarchical clustering algorithm. This analysis was conducted by pooling the samples of Irish and Dutch companies. Variance analytical criteria pointed to a six-cluster solution and this solution has been validated for both countries (Horgan, 2003).

Table 3.3 Types of HPHR Adoption

HPHR		Clusters				
Dimensions	Full Adopters	Selective Adopters		Non-Adopters		
	n=11; 13.6 %	n=34; 42.0%		n=36; 44.4%		
	n=11	n=16	n=18	n=7	n=18	n=11
Incentives	.94	.55	.49	-1.82	-.11	-.47
Training	1.13	-.26	1.29	-.76	-.68	.03
Gifts	.56	.84	.03	-.66	-.94	.75
Guidance	1.99	-.06	-.15	-.60	-.53	.13

Table 3.3 presents the cluster centres of the six-cluster solution. One cluster is comprised of companies that exhibit consistently high scores across all HPHR practices. This cluster is considered to be a *full adopter* of HPHR. Eleven companies in Ireland are full adopters (13.6 per cent). Two further clusters are comprised of companies that invest in many, but not all, of the HPHR

dimensions: one of these offers high levels of incentives, training and selectivity programmes but little in terms of gifts or guidance; the second, invests in the use of incentives, gifts and selectivity. These are referred to as the *Selective adopters*, to which 34 companies belong (42 per cent). The remaining adoption type, the *Non-adopters*, is represented by three clusters. All three are remarkable in their low use of HPHR practices. Together, 36 companies belong to this group of non-adopters (44.4 per cent). For further details see (Horgan, 2003).

Further support for the classification has been sought in a nomological validation. As theoretically anticipated the full-adopters exhibit by far the best employee performance and strong complementarities between the HPHR practices. The selective adopters lack these complementarities (Horgan, 2003). This is consistent with the theoretical argumentation developed above that companies dependant on high-quality employee input will avail of the full set of HPHR practices.

The *cost minimisation* variable has been operationalised differently for the Ireland and Netherlands sample. For the Ireland sample, the following items were used: "*How important are the following items in determining the business strategy of this company?*" (i) Providing products at prices below those of competitors' prices; (ii) Cost containment (1=not important; 5=very important).

The price-undercutting item was considered the item closest to Porter's concept of companies competing by price war. A correlational analysis revealed that as expected, the four cost-management items used in the Netherlands' questionnaire are indeed more highly correlated with one another than with the price-undercutting item. This high intercorrelation between the items indicates that it is indeed feasible to consider them as a differentiation of the general cost-containment item used in the Ireland questionnaire. In order to minimise the differences between the scales that would be used for the data analysis, it was decided that the price-undercutting item remain unchanged and that the cost management items be re-weighted. The summated scale Netherlands *Cost minimisation* scale has a Cronbach's alpha of $\alpha=.70$ and for the Ireland scale it is $\alpha=.51$.

Differentiation business strategy: The operationalisation of the differentiation business strategy involved the use of the following items: "*How important are the following items in determining the business strategy of this company?*" (i) To improve the quality of product or service; (ii) To improve the range of product/service; (iii) To customise product/service; (iv) To develop innovative product/service; (v) To switch quickly between production of different product/service requirements; (vi) To produce product/service for the higher-priced segments of the market; (vii) To develop new techniques and methods to market our products; (viii) To penetrate/develop new markets. The Cronbach's alpha for merged data set is .72, for the Ireland set .77 and the Netherlands set is .71. For Ireland, the correlations between the business strategy scales is $r=-.01$ and for the Netherlands $r=.28$ ($p<.01$).

HR prominence: To measure the two as was measured by the following items: (i) *"In this company, major organisational decisions are usually made* (a) without (=0) or (b) with (=1) input from the HR/Personnel function?"; (ii) *"On the organisation chart of this company, the top HR/Personnel manager..."* (a) reports directly to the CEO (=3); (b) is two levels below the CEO (=2); (c) is more than two levels below the CEO (=1); (iii) *"In this company the CEO meets with the senior HR/Personnel Officer..."* (a) Infrequently (=1); (b) occasionally (=2); (c) frequently (=3).

Company Co-orientation: In order to measure the extent to which companies are influenced by the practices that significant other companies use, two variables were used. These variables were summated to comprise the index. The items used were as follows: (i) *"How important are the HR practices that other competing companies are following in determining the HR programme implemented in this company?"* (1= not important; 5=very important). To measure the extent to which companies referred to a set of 'best practices' used by other companies the following item was incorporated into the questionnaire: (ii) *"How important are the 'best practices' of other companies in determining the HR practices that are implemented in this company?"* (1=not important; 5=very important).