High performance work systems, organisational culture and firm effectiveness

Deanne N. Den Hartog, Erasmus University Rotterdam, Netherlands
Robert M. Verburg, Delft University of Technology, Netherlands
Human Resource Management Journal, Vol 14 no 1, 2004, pages 55-78

The HRM literature emphasises the importance of people in enhancing firm performance or even creating competitive advantage. This study provides further evidence on the link between so-called high performance work systems and firm performance and relates these to organisational culture. In total 175 organisations from different sectors in the Netherlands participated. Senior HR managers were questioned on HRM practices and chief executives on organisational culture. Three different groups of personnel are distinguished in the measures: core employees, managers and specialist professional staff. One high performance work system could be distinguished, consisting of a combination of practices with an emphasis on employee development, strict selection and providing an overarching goal or direction. Results of regression analyses controlling for sector, firm size and age show a significant impact of this system on several performance outcomes (perceived economic outcomes, beyond contract and absenteeism), as well as positive relationships with three organisational culture orientations. Practices that are not part of this combination also show some positive (but limited) links with culture and outcomes.
Contact: Deanne N. Den Hartog, Erasmus University Rotterdam, Rotterdam School of Economics, Burg. Oudlaan 50, 3062 PA Rotterdam, The Netherlands. Email: denhartog@few.eur.nl

The role of employees or 'human resources' in enhancing organisational performance or creating sustained competitive advantage has attracted much research attention. A single, widely accepted definition of human resource management does not exist, but Storey (1995: 5) defines HRM as 'a distinctive approach to employment management which seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an integrated array of cultural, structural and personnel techniques'. Within the HRM field, several authors argue for the existence of so-called 'high involvement work practices' (*eg* Delaney and Huselid, 1996) or 'high performance work practices' (*eg* Huselid, 1995) that are likely to result in increased organisational performance. Authors also propose a synergistic effect of certain combinations of practices (*eg* Delery, 1998; Wright and McMahan, 1992). Such combinations are sometimes labelled high performance work systems or high involvement work systems (*eg* Huselid, 1995). Such systems have been related to a range of outcomes and measures of firm performance (*see*, for example, Arthur, 1992; Batt, 2002; Becker and Gerhart, 1996; Delaney and Huselid, 1996; Guthrie, 2001; Huselid, 1995; Ichniowski *et al*, 1996; Ichniowski and Shaw, 1999; MacDuffie, 1995). Overall, results of empirical work suggest substantial benefits from managing human resources effectively, although many questions remain unanswered (Delery, 1998).

Many of the studies in this area were carried out in the US (*eg* Huselid, 1995) or UK (*eg* Guest, 2001) contexts, and an interesting question is whether similar results are found in other countries. The study described here took place in the Netherlands and aims to offer a test of the high performance work practices/firm performance link in the Dutch context. To meet this aim we first test whether the high performance work practices measured in our study can be combined into high performance work systems. Next, we test whether such practices explain different outcomes (perceived organisational and economic performance, employees' willingness to go beyond contract, absenteeism and turnover). The study also aims to add to previous research by relating high performance work practices to an established measure of organisational culture. Thus, we assess whether high performance work practices employed by the organisation can be empirically combined into high performance work systems and how they relate to several performance measures as well as organisational culture in a sample of 175 Dutch organisations.

SYSTEMS AND PERFORMANCE

The relationship between high performance work practices or systems and firm performance has been the topic of a heated debate over the last decade (*eg* Wright and Snell, 1998; Guest, 1999; Purcell, 1999; Gerhart *et al*, 2000a). Significant progress has been made in unravelling the links between such systems and performance, even though several theoretical and empirical problems remain. For example, as Purcell (1999), Guest (2001) and others have noted, there is no clear consensus on the number or content of the practices that should be included. Many different practices are studied. Also, whereas some focus on (separate) practices and their effects (*eg* Dyer and Reeves 1995; Guest, 1997; Osterman, 1994), others take a systems approach and argue for synergetic effects of combinations of practices (*eg* Arthur, 1994; Bae and Lawler, 2000; Ichniowski *et al*, 1997; Koch and McGrath, 1996). Although empirical support is found for positive effects of some such (combinations of) practices, many issues remain unclear. For example, Delery (1998) points out that HRM practices do not necessarily only have synergistic effects, but may also act as substitutes or work against each other. Also, it is not always clear when a single 'policy' or 'practice' is in fact a 'system' or 'bundle' (*eg* Boselie and Dietz, 2003). For example, training and development is usually seen as a single HRM practice. However, it can be operationalised as management development, internal promotion, career planning or skills training. Several of these may be present in an organisation and, as such, 'employee development' can also be seen as a bundle of related and aligned practices in this area.

Boselie and Dietz (2003) review published articles focusing on the high performance work practices/performance link to assess which practices are most often included. They find that practices related to employee development and training, participation and empowerment, information sharing and compensation systems are most often mentioned as part of the high involvement or high performance work practices or systems approach. Batt (2002) reaches a similar conclusion. She states that high involvement work systems generally include 'relatively high skill requirements; work designed so that employees have discretion and opportunity to use their skills in collaboration with other workers; and an incentive structure that enhances motivation and commitment' (Batt, 2002: 587). Delaney and Huselid (1996) mention employee participation and empowerment, job redesign including team-based systems, extensive employee training and performance-contingent incentive compensation as practices that are likely to improve organisational performance. However, the

operationalisation of these practices varies widely in different studies and a range of other practices is also included in many models (for instance, in the area of selection and performance appraisal).

The context in which organisations operate may limit or enhance the usefulness, distinctiveness and success of high performance work practices or systems. The current study was carried out in the Netherlands. Dutch labour laws are strict and some high performance work practices that vary widely elsewhere are required by law or regulated in the Netherlands (*eg* Boselie *et al*, 2001). Thus, in some areas firms have less leeway to distinguish themselves from other employers. For example, the Dutch system of works councils ensures employee participation (every firm of more than 50 employees is obliged by law to have a works council) and Dutch law provides the representatives of the employees with a number of rights towards employers and management. There are strict laws on working conditions regulating, for example, maximum numbers of hours, safety and equipment. Also, trade unions are involved in an extensive system of collective bargaining at the sector level. For example, sector-level wage agreements are strict and renegotiated regularly, resulting in wage compression. Thus, an individual organisation's freedom to vary reward schemes is much more limited in the Netherlands than, for instance, in the US. Collective agreements also ensure relatively high job security. Thus, regulations constrain or prescribe several practices found in the high performance work systems literature (including employee participation, employment security and compensation). Of course, this does not mean that there is no room for manoeuvre. Other practices are less regulated. Also, whereas labour legislation and collective bargaining agreements set the boundaries, HR managers can, within these boundaries, tailor the specifics to their organisation.

In the current study we included a set of practices that have been suggested or shown to be part of high performance work systems (taking the Dutch system of laws and regulations into account). We focus on practices in the following areas: strict selection, incentive pay and profit sharing, the use of job redesign and task analysis, information sharing and employee autonomy (as an operationalisation of participation), performance appraisal, teamwork, training, and an emphasis on keeping skills up to date, having opportunities for internal promotion and management development, as well as having an overarching philosophy (a mission statement and HRM strategy). This list is not exhaustive, but encompasses many of the relevant high performance work practices identified in previous empirical as well as theoretical work (*eg* Huselid, 1995; Delaney and Huselid, 1996; Guest, 1997; Guthrie, 2001). A more detailed description of each of the practices, as well as their operationalisation, is provided in the 'Method' section.

Many studies measure practices without taking into account that organisations may use different practices for different groups of personnel (a notable exception is the study by Lepak and Snell, 2002). For instance, managers are often selected and rewarded in a different way from other employees. This study taps the use of high performance work practices for three different groups of personnel, namely core production or service employees, line managers and specialist staff (such as technical experts or professional specialists). This offers the opportunity to check whether practices are applied similarly for these different groups.

The lack of consensus regarding which high performance work practices should be included also holds for the aspects of firm performance that these practices are proposed to affect. Studies assess different outcomes ranging from financial performance (*eg* Huselid *et al*, 1997) or firm productivity (*eg* Guthrie, 2001) to employee commitment (*eg* Whitener, 2001), absenteeism (*eg* Guest and Peccei, 1994) and customer

satisfaction (*eg* Rogg *et al*, 2001). Vast differences also exist in the operationalisation of such measures (Boselie and Dietz, 2003). For example, financial performance is operationalised as sales or return on sales, return on investment, return on assets, return on equity or profit (which can again be measured in different ways). Similarly, productivity is defined in many ways (for example, in terms of sales per employee, time required to produce a product or as output divided by labour input).

Here, we use perceived measures of organisational performance. Studies by Delaney and Huselid (1996) and Bae and Lawler (2000) use similar measures. As Guest (2001) points out, using measures of a perceptual nature is often hard to avoid when different types of organisations from vastly different sectors are studied simultaneously. We also relate high performance work practices to behavioural measures of turnover and absenteeism (*eg* Guest and Peccei, 1994). Finally, we assess managers' assessments of employees' willingness to go beyond contract, which Storey (1995) suggests to be an important HRM outcome. We expect high performance work practices to correlate positively with perceived performance, employees' willingness to go beyond contract and negatively with turnover and absenteeism. Another important element of this study is the link between high performance work practices and culture, which is explored below.

ORGANISATIONAL CULTURE

HRM is often associated with organisational culture (*see*, for example, Guest, 1994; Legge, 1995; Mabey and Salaman, 1995). According to Deal and Kennedy (1982), successful firms distinguish themselves from less successful ones through their clearly articulated and shared norms and values regarding organisational functioning. They hold that 'people are a company's greatest resource, and the way to manage them is not directly by computer reports, but by the subtle cues of a culture' (Deal and Kennedy, 1982: 15). In their view, creating a strong organisational culture is a powerful tool to influence employees' behaviour and improve performance. The informal rules may help employees to understand what is expected of them and such a culture may also help people feel better about their efforts on behalf of the organisation. Or, as Guest puts it: 'Employees perform because they want to, or at least feel obliged to, rather than in response to financial incentives or bureaucratic requirements' (Guest, 1994: 254).

Guest (1994) suggests that, through selection, socialisation and training procedures, HRM may contribute to both the emergence and maintenance of shared patterns of norms, values and informal rules within organisations. Thus, HRM practices and, more specifically, high performance work practices may have an impact on organisational culture (which in research would imply treating culture as a dependent variable). One can also argue the reverse. The dominant culture may influence the HRM policy and practices adopted by organisations. Likely, the influence runs both ways. Another type of proposition worth exploring is whether performance is better where HRM practices and culture align (a fit perspective). Research on all these perspectives is useful. Our empirical tests focus mainly on the first perspective. We assess the relationship between high performance work practices and culture orientations and assess whether such practices explain variance in culture orientations.

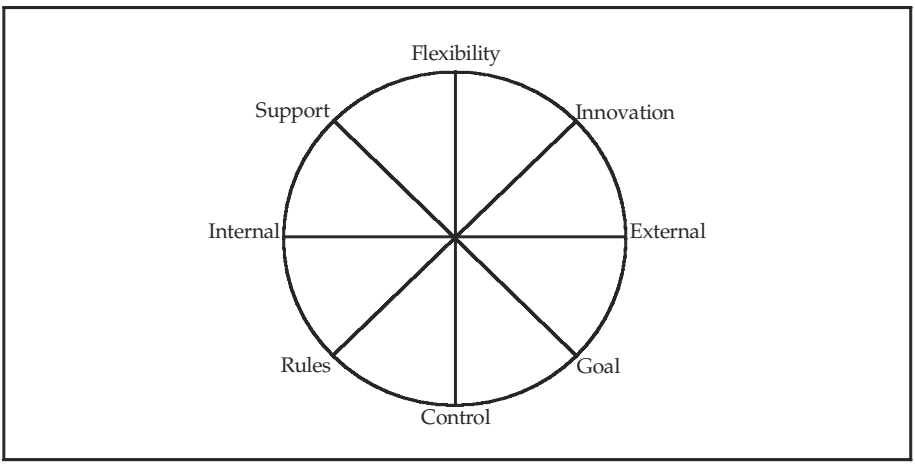
Many different definitions of culture have been proposed over the years (*see*, for example, Denison, 1996). Here, we define organisational culture as 'a set of core values, behavioural norms, artefacts and behavioural patterns which govern the way people in an organisation interact with each other and invest energy in their jobs and the organisation at large' (Van Muijen *et al*, 1992: 250). Two layers of culture can be

distinguished in this definition. The expressive symbols constitute the behavioural component of organisational culture – the visible top layer in which culture manifests itself. The deeper layer of culture is formed by invisible norms and values. These create the underlying causes of behaviour.

Managers and especially top managers play a crucial role in culture formation as they embed and transmit culture in the thinking, feeling and behaviour of members of the organisation. According to Schein (1992), managers have several primary 'culture embedding mechanisms'. These include what they as leaders regularly pay attention to – measure and control; how they react to organisational crises; and their role in modelling and coaching. High performance work practices can also act as culture embedding mechanisms. Examples of HRM practices that can play such a role are the observed criteria by which resources, rewards and status are allocated in the organisation and the criteria used to recruit, select, promote, retire or excommunicate organisational members. Kerr and Slocum (1987), for instance, describe two types of corporate reward systems that give rise to different cultures (so-called clan and market cultures, *cf* Ouchi, 1981). As such, high performance work practices may play an important role in shaping culture. Schein (1992) also describes several secondary 'culture articulation and reinforcement' mechanisms. These are secondary in the sense that they work only when they are in line with the primary mechanisms. These include organisational structure, systems and procedures, and formal statements of organisational values, philosophy or creed. These again suggest that different high performance work practices may influence organisational culture.

In this study we used the FOCUS measure of organisational culture. FOCUS is an international group of researchers who developed a questionnaire to measure organisational culture (Van Muijen *et al*, 1999). The questionnaire is based on the 'competing values' model (Quinn, 1988). This model consists of two dimensions with contrasting poles (*see* Figure 1). The first dimension represents the organisation's focus. This is either directed internally, which makes the organisation itself, its processes or its people central, or externally, in which case the relation of the organisation with its environment is emphasised. The second dimension contrasts the emphasis on flexibility and control. Combining the two dimensions yields four organisational culture orientations (*cf* Quinn, 1988). Organisations can score high or low on any

FIGURE 1 *The focus model of organisational culture*



combination of these dimensions. The four orientations are labelled the support, the innovative, the rules and the goal orientation (*see* also Den Hartog *et al*, 1996; Van Muijen and Koopman, 1996; Van Muijen *et al*, 1999).

Central to the support orientation are concepts such as co-operation, social, mutual trust, group cohesion and individual growth. Commitment of the individual employee is emphasised. High performance work practices aimed at employee development seem especially relevant for this orientation. The innovative orientation is characterised by concepts such as searching for new information in the environment, creativity, openness to change, competition, anticipation and experimentation. Control from above is neither possible nor required, and management expects flexibility and involvement of employees. High performance work practices emphasising flexibility, empowerment and openness seem most relevant for this orientation. The goal orientation emphasises rationality, objectives, productivity and functionality. Efficiency and accomplishment of employees is emphasised. High performance work practices emphasising progress towards targets such as performance measurement and performance-related pay seem relevant here. The rules orientation emphasises respect for authority, rationality of procedures and division of work. The structure is hierarchical. Compliance is stressed. Practices emphasising control and following procedures are likely to be related to this orientation. Such practices are usually not proposed to be part of high performance work systems. Therefore, the relationship between such systems and the rules orientation is likely to be lower than for the other orientations.

To date, the empirical research evidence regarding the link between culture, high performance work practices and performance is limited. In this study we explore these relationships using top managers as key informants. In order to decrease problems of same-source bias, two key informants per organisation were involved (HR directors provided information on HRM while chief executives discussed organisational culture). Thus, we focus on high performance work practices, as rated by HR directors, and organisational culture orientations as perceived by top managers (chief executives), as well as outcome measures (provided by both informants).

METHOD

The highest ranking HR manager and the chief executive (or, when the chief executive was not available, another member of top management) of 678 organisations in the Netherlands were sent questionnaires. The sample was drawn from the database of the Netherlands Association for Personnel Management (NVP) which has more than 5,000 members. Not all members are senior HR managers, but the database includes their positions. From the category of senior HR or personnel directors (*ie* top management level) a random selection of names was made. These HR directors were sent two questionnaires. The first was the human resource management inventory, a questionnaire assessing the HRM practices employed by the organisation. HR managers were asked to fill these out personally. The second questionnaire was an organisational culture and firm performance questionnaire (*see* below). The HR managers were asked to give this second questionnaire to the chief executive to fill out (or, if that was not possible, to another member of the top management team). The HR managers were asked to return both questionnaires. Three weeks later, a reminder was sent. Two weeks after that the researchers called those who had not responded to request their participation. Dillman (1978) recommends such a procedure using reminders and a follow-up call in survey studies.

In total, 175 complete sets of two questionnaires were returned – a 25.8 per cent response rate. This response rate is comparable to other studies. For instance, Huselid

(1995) reports a 28 per cent response, Delery and Doty (1996) 21 per cent and Brewster and Hegewisch (1994) 22 per cent. The follow-up calls provided the possibility to check reasons for non-response. Fourteen per cent of the HR managers who were approached had left the organisation. A further 3 per cent indicated that they had terminated membership of the NVP and were not interested in participating in such a survey supported by them. (Many managers who did respond indicated that the fact that the NVP supported the survey to them was one of the reasons to participate.) Finally, the remaining reasons given for non-response were lack of time and 'survey-fatigue'.

Table 1 shows sector and number of employees of organisations in the sample. The largest group of organisations was in the industrial sector, followed by foundations and governmental institutions, healthcare and consulting firms. A substantial percentage was in the miscellaneous group, including sectors such as transport and distribution, construction, publishing and food services. Organisation size varied. Only a few small firms (fewer than 50 employees) were found in the sample (1.1 per cent). A total of 17.7 per cent were relatively large organisations (> 1,000 employees), the rest were in between. The age of the participating firms varied from one year to 385 years; 16.6 per cent were relatively young and founded up to 10 years previously; 13.1 per cent had existed between 10 and 25 years and 44.5 per cent between 25 and 100 years. The remainder had been active even longer. In the regression analyses presented below we will control for sector, age and size of the organisation. The firms also indicated a strong emphasis on change. Over 65 per cent indicated that they were involved in major restructuring in the previous three years and 72 per cent said that they had attempted to change culture in the same period.

TABLE 1 *Sector and number of full-time employees of the participating organisations*

No of employees: (full-time equivalent)	**<50**	**50-99**	**100-199**	**200-499**	**500-749**	**750-999**	**>1,000**	**Total**
Sectors								
Production	-	2	11	15	7	2	10	47
Foundations and govt	-	4	5	7	1	2	7	26
Healthcare	-	4	6	6	4	1	2	23
Consultancy	-	2	7	7	1	1	5	23
Financial services	-	2	2	4	2	2	2	14
Trade	-	1	3	4	2	1	2	13
Education	-	-	-	3	1	1	-	5
Miscellaneous	2	2	6	4	5	2	3	24
Total	**2**	**17**	**40**	**50**	**23**	**12**	**31**	**175**

MEASURES

As stated, survey measures of HRM, culture and outcomes were used. We first describe those completed by senior HR managers and next the ones filled out by chief executives.

HR managers

HRM items and scales The Human Resource Management Inventory used in this study was developed and tested in pilot studies by Verburg (1998). The questionnaire asks HR managers to provide information on an array of HRM practices in domains such as recruitment and selection, performance appraisal and rewards and training and development, as well as job design, participation and task fulfilment. In most items, three groups of personnel are distinguished, namely core employees (defined in the

questionnaire as core employees involved in the primary process of the organisation, such as core production or service employees), specialists/staff members and managers. For instance, in an item referring to training and development, HR managers are asked to indicate how many days a year people receive training (*see* also Huselid, 1995). In this study HR managers were asked to indicate this separately for each of the three aforementioned groups of employees.

We selected items referring to practices that have been associated with high performance or high involvement work systems in previous work (*see*, for example, Huselid, 1995; Delaney and Huselid, 1996; Guthrie, 2001; Rogg *et al*, 2001; Snell and Dean, 1992). Different response formats were used. Some items required an answer on a five-point scale; others asked respondents to provide percentages, rate frequencies or provide a 'Yes' and 'No' answer, indicating whether or not the practice was followed by the organisation. This mix of formats is also found in previous research (*eg* Rogg *et al*, 2001; Vandenberg *et al*, 1999). Where possible, we combined items into scales. All items and scales are presented in detail below. Most of the items are similar to those used in previous research. A difference with previous measures is that HR managers were asked to provide information for three groups of employees. Below, we first describe the separate items for the different practices and then analyse whether these practices can be meaningfully combined.

Following studies by Huselid (1995) and others, we included selectivity in hiring. This helps ensure that organisations get highly skilled and qualified people for the job, and has a symbolic function towards newly recruited employees (to whom it conveys the message that they are appreciated and chosen specifically to join this organisation, which helps create high performance expectations) (Pfeffer, 1994). Huselid (1995) measures this by asking for the proportion of the workforce that receives an employment test prior to hiring. We asked HR managers to indicate on a five-point scale (1 = 'Never' to 5 = 'Always') whether a list of five types of selection procedures (standard forms, interviews, psychometric tests, assessment centres and specialised search firms) were used in the selection of each of the three groups of personnel. A principal component analysis with varimax rotation was performed on all these items (*see* Table 2) and yielded two factors. The first factor explains 22.93 per cent of variance and the second 19.04 per cent (eigenvalues 3.4 and 2.9 respectively). The first factor was labelled 'Strict selection' and combined the use of tests and assessment for all three groups, as well as search firms for managers and specialists (Cronbach's alpha was .80; mean was 2.49). The second factor describes the use of standard forms for each of the groups, and was left out of further analyses as this was not considered part of a high performance work systems approach. Interviews and the use of search firms for employees did not load clearly on either factor.

Four items were included that were linked to different aspects of employee development and internal career opportunities. Keeping skills up-to-date and learning new things is needed to ensure quality and improvement of performance, and providing employees with promotion opportunities can be highly motivating. In line with Huselid (1995), we asked how many days a year each of the three groups received training (means were 5.02, 6.61 and 6.00 for employees, specialists and managers respectively). Cronbach's alpha for the scale combining these three items was .81. HR managers were also asked to indicate to what extent employees were required to keep their knowledge and skills up to date (from 1 = hardly at all to 5 = very strongly). The mean for employees was 3.23, for specialists 3.8 and 3.7 for managers. Cronbach's alpha for the scale combining these three items was .80. We also asked whether firms employed a system of management development; 105 firms indicated that their firms

TABLE 2 *Factor loadings of selection items*

		1	2
1	Use of standard forms – general employees	-.01	**.94**
2	Use of interviews – general employees	.01	.14
3	Use of tests – general employees	**.68**	-.01
4	Use of assessment centres – general employees	**.57**	-.01
5	Use of specialised firms – general employees	.13	-.00
6	Use of standard forms – specialists	-.01	**.95**
7	Use of interviews – specialists	.00	.22
8	Use of tests – specialists	**.77**	.11
9	Use of assessment centres – specialists	**.80**	.00
10	Use of specialised firms – specialists	**.40**	.01
11	Use of standard forms – managers	-.00	**.92**
12	Use of interviews – managers	.01	.29
13	Use of tests – managers	**.65**	.16
14	Use of assessment centres – managers	**.77**	.01
15	Use of specialised firms – managers	**.43**	.20

Loadings > .4 are printed in bold

had such a system while 69 did not. Finally, HR managers rated the possibilities for internal promotion for each of these three groups ('How would you rate the possibilities for promotion within this organisation for the following groups of employees...?' on a five-point scale from 1 = 'Very poor' to 5 = 'Excellent'). This item is similar to items measuring internal career opportunities developed by Delery and Doty (1996). Means were 2.77 for employees, 2.91 for specialists and 2.79 for managers, and Cronbach's alpha was .73.

Two items focused on rewards (pay-for-performance and profit sharing). Delaney and Huselid (1996) and others suggest that these practices motivate high performance. As stated, the Dutch collective bargaining system restricts differentiation in rewards in terms of salary and performance-based pay. However, limited pay-for-performance and profit-sharing schemes are often present. The first item asked (for all three groups) what the individual level reward consisted of (1 = base salary, 2 = base salary plus general bonuses, 3 = base salary plus performance-related bonuses, 4 = base salary plus general and performance-related bonuses). For employees the mean was 1.53; 119 firms had base salary only, 20 a general bonus but no performance-related element and 28 had a performance-related component in their pay. For specialists, the mean was 1.74; 105 firms had base pay only, 18 a general bonus and 45 a performance related-component. For managers, the mean was 2.16; 77 firms had a base salary only, 21 a general bonus and 70 a performance-related component. Thus, performance-based pay was found mostly for managers. Cronbach's alpha for the scale combining these was .84.

The second aspect of compensation we measured was whether organisations employed a formal system of profit sharing for each of the three groups. Fifty-four firms had such a scheme for employees, 58 for specialists and 61 for managers. The Cronbach's alpha was .98 for the combination of these three items.

Several authors propose that performance evaluation should form the basis for compensation and promotions and is, as such, important in attaining high performance (*eg* Fletcher, 2001; Huselid, 1995). We measured two elements, namely the frequency with which individual level performance is measured and whether team performance plays a role in performance evaluation. The frequency of individual level performance evaluation was reported on a five-point scale (1 = once a year or less to 5= continuously) for each of the three groups. For employees, the majority of firms assessed performance

only once a year or less (N = 127). However, for specialists and managers, performance was assessed more often, with a mean of 3.29 for specialists and 3.25 for managers. Scale analyses shows that the corrected item total correlation for employees was rather low (.28). This item was removed from the scale, which increased Cronbach's alpha from .69 to .91. Thus, the final scale for frequency of performance measurement consisted of the rating for managers and specialists only. Respondents were also asked whether or not team performance played a role in performance evaluation for each of the three groups, which in most cases it did (varying from 113 for managers to 138 for specialists). Cronbach's alpha was 0.71.

Participation and communication are often stressed as part of high performance work systems (*eg* Batt, 2002). Participation and information sharing are proposed to affect discretionary effort through their influence over employee skills and motivation and through organisational structures that provide employees with the ability to control how their roles are performed (Huselid, 1995). As stated, Dutch labour law implies that a formal system of employee participation is mandatory (for organisations with more than 50 employees). Other participation and information sharing practices vary. We measured the extent to which organisations have formalised information sharing meetings (*werk overleg*) at the department or organisational level. In such meetings managers present work-related issues, policies and procedures and get employees' feedback. We asked how often such meetings were held (1 = every week, 2 = every month, 3 = a few times a year or less). The mean was 2.53. A total of 30 organisations had such meetings weekly, 77 monthly, and the remaining organisations a few times a year or less. Employee participation is often operationalised as employee discretion in decision-making or employee autonomy (*eg* Delery and Doty, 1996). In our study HR managers rated employee autonomy ('To what extent do employees have discretion in determining how they perform their tasks?') on a five-point scale (1 = 'Not at all' to 5 = 'Always'); mean was 3.2. Delery and Doty (1996) used similar items to tap employee participation (*eg* 'Employees in this job are allowed to make many decisions').

Some authors also propose an impact of task analyses and job design on performance (*eg* Delaney and Huselid, 1996). Here, HR managers were asked to indicate whether the organisation used thorough task analyses and evaluations with the aim to improve productivity; 105 indicated that they did so.

Finally, two items were used to tap the extent to which organisations had an overarching philosophy. Pfeffer (1994) suggests that this is important for aligning employee efforts. Vandenberg *et al* (1999) note that mechanisms must be in place to communicate the organisation's goals or intended direction to employees. Vision or mission statements have been linked to performance (*eg* Baetz and Bart, 1996; Sidhu, 2003; Larwood *et al*, 1995). A sense of mission can be highly involving for employees and increase motivation to work towards the common goal (*eg* Klemm *et al*, 1991). Having such an overarching philosophy may also help align the different HRM practices. Two items were used here to tap this. The first was whether the organisation had a mission statement (89 firms indicated that they had one, while 84 did not) and the second asked whether the organisation had a written HRM strategy (66 firms indicated they did have such a strategy; 107 did not).

High performance work system To assess whether the separate practices we measured can be seen as coherent high performance work systems, we followed the approach used by Huselid (1995) and performed a principal component analysis on the 14 aforementioned items and scales. The scree plot suggests a two-factor solution. The first factor explains 17.65 per cent of the variance, the second 11.73 per cent (eigenvalues

were 2.5 and 1.6 respectively). Table 3 presents the loadings of the items on these factors. Only the items in the first factor formed a relatively consistent and interpretable scale. This factor combined seven items/scales related to employee development and promotion, strict selection and the overarching philosophy. The item asking for days of training had a very low corrected item-total correlation (.17) and was removed from the scale. The remaining six-item scale had a Cronbach's alpha of .62, which is somewhat low but deemed acceptable. We labelled this scale 'Employee skills and direction'. The second factor did not yield an internally consistent and interpretable scale. Thus, the seven items that were in the second factor were used separately in further analyses.

Table 4 presents the intercorrelations between the high performance work practices measures. These correlations are relatively low. Employee skills and direction correlates significantly positively with the two items on compensation (pay-for-performance and profit sharing). Pay-for-performance and profit sharing also correlate positively. The frequency of individual level performance evaluation (for managers/specialists) correlates positively with the use of team performance in evaluation and the frequency of information sharing meetings. Finally, autonomy correlates negatively with the use of job evaluation and task analyses.

TABLE 3 *Factor loadings of high performance work practices*

		1 *Employee skills and direction*	2 *Performance management practices*
1	Strict selection: use of tests/assessment centres	**.57**	-.13
2	Training	**.48**	-.35
3	Obligation to update skills	**.54**	.00
4	Possibilities for internal promotion	**.61**	.38
5	Management development	**.55**	.17
6	Mission	**.49**	.00
7	HRM strategy	**.61**	.00
8	Frequent performance evaluation	.00	**.58**
9	Team performance	.00	**.52**
10	Pay-for-performance	.36	**.46**
11	Profit sharing	.23	**.43**
12	Frequency of information sharing meetings	.00	**.57**
13	Autonomy	.13	.29
14	Job evaluation and task analyses	.00	.22

Loadings > .4 are printed in bold

TABLE 4 *Correlations between high performance work practices/system measures*

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Employee skill and direction	-	.10	.22**	.18*	.07	.08	.02	.03
2 Autonomy		-	.07	-.12	.06	.12	.07	-.15*
3 Pay-for-performance			-	.26**	.03	.09	.05	-.05
4 Profit sharing				-	.10	.17*	.05	.14
5 Performance evaluation					-	.15	.20*	.09
6 Team performance						-	.03	.08
7 Information sharing meetings							-	.06
8 Job evaluation								-

$p < .05$ ** $p < .01$ (two-tailed)

Outcomes The questionnaire filled out by the HR managers also tapped several outcomes (beyond contract and performance as well as turnover and absenteeism). HR managers rated whether the three groups tended to go beyond contract ('Do employees/specialists/managers do more than is typically required in their contract or job description?') on a five-point scale, from 1 = 'No' to 5 = 'To a high degree'. Cronbach's alpha was .73. The scale was labelled 'Beyond contract'. HR managers also answered two general performance items. These were 'How would you rate the overall quality and performance of your employees in relation to your competitors?' (1 = 'Low' to 5 = 'Very high') and 'How would you rate the overall performance of your company in relation to other significant companies in your market?' (1 = 'Much worse' to 5 = 'Much better'). These two performance items are similar to the types of items to measure perceived organisational performance used by Delaney and Huselid (1996), and were combined with the firm performance ratings provided by the chief executives (see below for principal components and scale analyses).

HR managers were also asked to provide the percentages of absenteeism and turnover for each of the three groups. Other studies have also assessed turnover and absenteeism in relation to practices (*eg* Dyer and Reeves, 1995; Guest and Peccei, 1994). We calculated Cronbach's alpha and the corrected item-total correlations for the three turnover items. Cronbach's alpha was 0.63 and corrected item-total correlation for core employees (.35) was much lower than for the other two items (.61 and .54 respectively). Cronbach's alpha increased to 0.85 by removing the item referring to employees from the scale. Thus, we combined managers and specialists and kept employees separate. This results in two turnover measures, one referring to employees and the other to both managers and specialists. The same holds for absenteeism. Cronbach's alpha was 0.66 and increased to 0.91 when the item referring to employees was removed. Thus, two absenteeism measures are used. The first refers to employees and the other to managers/specialists.

Chief executives

Culture Chief executives were asked to fill out the descriptive part of the FOCUS questionnaire designed to measure indications of organisational culture (*see*, for example, Van Muijen *et al*, 1999). The questionnaire instructed respondents to rate 25 items on a six-point scale (from 'Never' to 'Always'). A sample item was given for each of the four orientations:

- Support: 'Employees with personal problems are helped here'
- Innovative: 'This organisation continually searches for new markets for products/services'
- Rules: 'In our organisation all instructions are written down'
- Goal: 'In this organisation people have clear goals for their work'

Cronbach's alpha was .87 for the support, .89 for the innovative, .73 for the rules and .88 for the goal orientation scale. The correlations between the culture orientations are presented in Table 6. Some are rather high, yet similar to those found in previous research (*eg* Den Hartog *et al*, 1996; Van Muijen *et al*, 1999).

Outcomes Chief executives filled out six items on performance, rating the organisation compared with main competitors in terms of profitability, market share, projected future investments and competitive position.

Sample items were: 'Within your market and sector, how would you rate you organisation on market share (rated on a five-point scale from 1 = 'Declining' to 5 = 'Rapid expansion'); profitability (rated on a five-point scale from 1 = 'Losses' to 5 =

TABLE 5 *Factor loadings of perceived performance items*

	1 *Firm performance*	2 *Economic outcomes*
1 Quality of employee performance as compared with…	**.66**	.16
2 Performance of organisation as compared with other firms in…	**.74**	.11
3 Marketing	.23	**.74**
4 Profitability	.35	**.54**
5 Competitive position	**.63**	.21
6 Level of task performance	**.67**	-.19
7 Board members and others' satisfaction with firm performance	**.66**	.27
8 Investments	-.13	**.78**

Loadings > .4 are printed in bold

'High profits'); competitiveness (rated on a five-point scale from 1 = 'Very weak' to 5 = 'Very strong')'. A principal component analysis of the eight performance items (six rated by the chief executive and two by the HR manager) yielded two factors (*see* Table 5). The first explains 34.88 per cent of the variance and the second 16.19 per cent (eigenvalues 2.8 and 1.3 respectively). The first combined five items on general performance (three answered by the chief executive and two by the HR manager) and was labelled 'Perceived firm performance'. Cronbach's alpha for this measure was .71. This measure is similar to Delaney and Huselid's (1996) measure of perceived organisational performance. The second factor (three items, all answered by the chief executive) combined ratings of the organisation's marketing, investments and profitability compared with other organisations in the same sector and was labelled perceived economic outcomes. This measure is similar to Delaney and Huselid's (1996) measure of perceived market performance. For perceived economic outcomes, Cronbach's alpha was somewhat low (.54). Thus, interpretation of the results for this measure should be done with some care.

Table 6 also presents the correlations among the outcome measures and culture. The correlations among the different performance and outcome measures are relatively low and they seem to relate to different aspects of the performance of organisations. The culture orientations are not correlated with turnover. However, the innovative, goal and support orientations are negatively related to absenteeism in the manager/specialist groups and innovation is also related to employee absenteeism. These innovative, support and goal culture orientations are positively related to perceived firm performance, going beyond contract and economic outcome. However, the rules orientation is not related to these measures.

RESULTS

Table 7 presents the correlations of high performance work systems and practices measures with culture and outcome measures. Employee skill and direction correlates positively and significantly with going beyond contract and economic outcome. The correlation with perceived firm performance is not significant. This remarkable pattern is similar to the findings in Delaney and Huselid's (1996) study, where more relationships were found between HRM and perceived market performance than between HRM and perceived organisational performance. Also, the correlations of employee skills and direction with both absenteeism measures are significantly negative. Those with turnover are not. Absenteeism (for managers/specialists) also

TABLE 6 *Correlations between outcome measures and culture orientations*

		1	2	3	4	5	6	7	C1	C2	C3	C4
Outcomes:												
1	Firm performance	-	.23**	.33**	.07	.01	-.15	-.11	.40**	.38**	.12	.34**
2	Beyond contract		-	.18*	-.10	.01	-.02	-.30**	.37**	.40**	.01	.40**
3	Economic outcome			-	-.09	-.15	-.04	.04	.19**	.51**	-.03	.29**
4	Employee turnover				-	.35**	-.11	-.10	.02	-.08	.03	.06
5	Manager/specialist turnover					-	-.12	.07	-.04	-.01	.02	.07
6	Employee absenteeism						-	.45**	-.14	-.17*	-.07	-.12
7	Manager/specialist absenteeism							-	-.16*	-.16*	-.05	-.16*
Culture orientations:												
C1	Support								-	.62**	.22**	.56**
C2	Innovative									-	.16**	.64**
C3	Rules										-	.41**
C4	Goal											-

$p < .05$ ** $p < .01$ (two-tailed)

TABLE 7 *Correlations between high performance work system and practices, outcomes and culture orientations*

	Firm performance	Beyond contract	Economic outcome	Employee turnover	Manager/specialist turnover	Employee absenteeism	Manager/specialist absenteeism	Supportive	Innovative	Rules	Goal
1. Employee skill/direction	.12	.31**	.25**	-.15	.03	-.20**	-.24**	.23**	.41**	.15	.42**
2. Autonomy	.04	.27**	.09	-.10	.02	-.04	-.05	.15	.06	-.30**	.08
3. Reward	-.02	.10	.22**	.11	-.02	-.09	-.19**	.09	.21**	-.03	.33**
4. Profit sharing	.07	.06	.17*	-.08	-.03	.06	-.08	.00	.18*	.01	.27**
5. Performance evaluation	.03	.13	.15	-.15	-.17*	.03	.12	.08	.16*	.04	.11
6. Team performance	.02	.14	.07	.02	-.08	-.10	-.04	.12	.12	-.05	.22**
7. Information sharing	-.02	.08	.01	-.17*	-.02	-.14	-.01	.01	.04	.02	.06
8. Job evaluation	.14	-.02	.13	-.03	.09	-.03	-.10	.06	.21**	.10	.11

$p < .05$, ** $p < .01$ (two-tailed)

correlates significantly negatively with pay-for-performance. Pay-for-performance correlates positively with perceived economic outcome, as does profit sharing. The frequency of performance evaluation for managers/specialists correlates negatively with turnover for that group. Turnover for employees correlates negatively with information sharing meetings. Finally, autonomy correlates positively with going beyond contract.

Table 7 also reports the correlations between high performance work practices measures (as provided by HR directors) and the culture orientations (as answered by chief executives). The scale for employee skill and direction correlates positively with three out of four culture measures (especially innovative and goal); only the correlation with the rules orientation is not significant. Interestingly, the innovative culture orientation correlates positively with five out of eight high performance work practices measures (employee skills and direction, pay-for-performance, profit sharing, frequent performance evaluations and use of job evaluation and task analysis), and the goal orientation with four (employee skills and direction, pay-for-performance, profit sharing and use of teams). The support orientation only correlates with employee skills and direction. The rules orientation does not correlate positively with any of the high performance work practices measures. However, a significantly negative correlation with employee autonomy is found.

Hierarchical regression analyses were done to assess whether employee skills and direction as well as the remaining practices explain variance in the outcome and culture measures. As we used a diverse sample of organisations from different sectors, we controlled for sector, firm size and firm age. The control variables were entered in the first step, employee skills and direction in the second step and the remaining high performance work practices measures in the third step. Significantly, variance is explained in perceived economic outcomes as well as going beyond contract (*see* Table 8), but not in perceived firm performance or turnover. For these latter measures, none of the three steps of the hierarchical regression analysis were significant (and are therefore

not reported in the table). Regarding the two absenteeism variables, HRM practices significantly predict variance in the absenteeism measure for the combined group of managers and specialists, but not for employees. For the latter, only the first step is significant, and 6 per cent of the variance is explained, with sector as the significant predictor. The second step approaches significance (total adjusted R^2 .075 and p-value of the change in R^2 is .08). In this step sector and employee skills and direction are the most relevant predictors (the latter again a negative predictor as expected, p-value .08). However, as these values are not significant at the .05 level, they are not reported in Table 8.

Table 8 presents the results for economic outcomes, beyond contract and absenteeism (manager/specialist). It shows the standardised beta weights, adjusted R^2 and their F-values, as well as the F-value for the change in unadjusted R^2 for each of the steps. HRM and control variables explain a total of 7.7 per cent of (adjusted) variance in economic outcomes, 10 per cent in beyond contract and 7 per cent in absenteeism for managers/specialists. For all three, the second step, in which employee skills and direction is added, is most relevant (the change in explained variance is significant here but not in the first and third step). Thus, these results show that the combination of high performance work practices we labelled employee skills and direction helps predict economic outcomes, beyond contract and absenteeism (for managers/specialists).

We also assessed whether high performance work practices explain variance in the culture orientations. For each of the four dependent variables we performed hierarchical regression analyses. The control variables (sector, size and age) were entered in the first step, employee skills and direction in the second step and the remaining practice measures in the third step. As can be seen in Table 9, explained variance ranges from a low of 3.5 per cent for the support and 11 per cent for the rules orientation to a high of 21 per cent for the innovative and 25 per cent for the goal orientation. In three out of four cases, sector is a significant predictor (innovative, rules and goal) and, for three out of four (support, innovative and goal), employee skills and direction adds significantly to the prediction. Significant predictors in the third step are autonomy (negative) for the rules orientation, pay-for-performance (positive) for the goal orientation and the extensive use of job evaluation and task analyses to improve productivity (positive) for the innovative orientation.

DISCUSSION

Recent overviews describe various theoretical and methodological challenges that researchers interested in the relationship between high performance work practices and firm performance face. These include the number, content and operationalisation of HRM practices, the relationships between them, how to address within firm variance on practices, the nature of the relationship with strategy (and how to measure strategy), which performance indicators are relevant, how to maintain firm flexibility, levels of analysis and aggregation issues, and the low reliability of single raters (*eg* Gerhart, 1999; Gerhart *et al*, 2000b; Guest, 2001; Wright and Boswell, 2002; Wright and Sherman, 1999; Wright and Snell, 1998). Also, the strategic HRM field needs to better understand how and when practices may enhance or complement each other (*eg* Delery, 1998; Wright and McMahan, 1992).

The current study aimed to provide further evidence regarding the proposed link between high performance work systems and several aspects of performance. A multi-source survey study was carried out, in which senior HR managers provided

TABLE 8 *Hierarchical regression analyses showing the impact of high performance work systems and practices on outcome measures*

VARIABLES	Dependent: Economic outcomes			Dependent: Beyond contract			Dependent: Manager/specialist absenteeism		
Added in Step 1:	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**
Sector	β -.18*	β -.13	β -.09	β -.11	β -.03	β -.06	β .22**	β .17+	β .18+
Firm size	β .11	β .07	β .11	β -.00	β -.05	β -.03	β .05	β .08	β .10
Firm age	β -.05	β -.04	β -.03	β .00	β .02	β .04	β -.03	β -.04	β .05
Added in Step 2:									
Employee skill and direction		β .20*	β .15+		β .30**	β .26**		β -.21*	β .20*
Added in Step 3:									
Autonomy			β .10			β .23**			β .04
Pay-for-performance			β .16+			β -.00			β .10
Profit sharing			β .04			β .04			β .04
Frequent performance evaluation			β .13			β .08			β .16+
Team performance			β -.01			β .07			β .02
Job evaluation			β .12			β -.02			β .09
Information sharing meetings			β -.06			β .03			β .00
Adjusted R^2	.026	.058	.077	.00	.071	.10	.033	.067	.070
F-value	2.30+	3.22*	2.10*	.61	3.78**	2.51**	2.60+	3.56**	1.98*
F-value for the change in R^2	2.30+	5.73*	1.40	.61	13.08**	1.73+	2.60+	6.13*	1.07

* Signif. ≤ .05 and
** - Signif. ≤ .01 (+ Sign ≤ .10) (one-tailed)
Fully standardised (β) regression coefficients

TABLE 9 *Hierarchical regression analyses showing the impact of high performance work systems and practices on culture orientations*

VARIABLES	Dependent: Support orientation			Dependent: Innovative orientation			Dependent: Rules orientation			Dependent: Goal orientation		
Added in Step1:	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**
Sector	β -.12	β -.06	β -.10	β -.26**	β -.17*	β -.13	β -.25**	β -.22**	β -.24**	β -.34**	β -.24**	β -.16+
Firm size	β .01	β -.03	β -.00	β .13	β .08	β .11	β .01	β -.01	β -.02	β .03	β -.03	β .00
Firm age	β -.08	β -.07	β -.04	β -.03	β -.02	β -.01	β -.08	β -.08	β -.09	β -.05	β -.02	β -.04
Added in Step 2:												
Employee skill and direction		β .22*	β .19*		β .35**	β .31**		β .09	β .15+		β .37**	β .31**
Added in Step 3:												
Autonomy			β .12			β .07			β -.30**			β .06
Pay-for-performance			β .04			β .11			β -.06			β .19*
Profit sharing			β -.09			β -.01			β -.13			β .07
Frequent performance evaluation			β .05			β .12			β .05			β .04
Team performance			β .08			β .04			β -.03			β .12
Job evaluation			β .06			β .19*			β .04			β .07
Information sharing meetings			β -.04			β .06			β .01			β -.00
Adjusted R^2	.00	.035	.022	.07	.18	.21	.041	.042	.11	.09	.21	.25
F-value	.83	2.33+	1.30	4.67**	8.88**	4.48**	3.08*	2.60*	2.65*	5.98**	10.70**	5.41**
F-value for the change in R^2	.83	6.72*	.73	4.67**	19.69**	1.77+	3.08*	1.15	2.56*	5.98**	22.17**	2.07*

* Signif. ≤ .05 and

** - Signif. ≤ .01 (+ Sign ≤ .10) (one-tailed)

Fully standardised (β) regression coefficients

information on the practices, chief executives completed a questionnaire tapping organisational culture and both provided some of the outcome measures. One of the questions addressed here was whether an alignment of practices would be found. Results show that a combination of practices existed involving strict selection, an emphasis on employee development and internal promotions, and having an overarching philosophy in terms of a mission statement and HR strategy. This set of high performance work practices was labelled 'Employee skill and direction'. Several other high performance work practices, such as autonomy, pay-for-performance, profit sharing and information sharing did not cluster and were considered separately.

As expected, we found positive relationships between the set of practices labelled 'Employee skill and direction' and employees' willingness to go beyond contract, and negative relationships with the two measures of absenteeism. Autonomy also showed a positive relationship with willingness to go beyond contract. Turnover was not strongly related to the high performance work practices; only performance evaluation and information sharing showed the expected negative correlations with turnover.

High performance work systems and practices were also hypothesised to affect perceptual firm performance measures in our study. Although the use of perceptual measures allowed us to assess the firm-level impact of high performance work practices in firms for which financial measures of performance are generally unavailable (*eg* non-profit firms), financial measures of firm performance are more desirable. Perceptual measures are regularly used in research, and our results for the perceived economic outcomes measure are consistent with studies that used objective performance measures (*eg* Huselid, 1995). Employee skill and direction, as well as several of the other practices, were positively related to this perceived economic performance measure. However, this does not hold for the measure of perceived firm performance that we used. Delaney and Huselid (1996) present similar results, showing stronger relationships for perceived market than for perceived organisational performance. Perhaps reversed causality plays a role, in that firms performing better in economic terms (*ie* with better profitability and a better investment position) may have more resources to devote to HRM. However, this is merely a suggestion and research is needed to clarify the differences between more general perceived performance measures and more focused measures assessing more specific perceptions regarding financial or market-related performance in their relation to high performance work practices.

As stated, we assessed the use of practices for three different groups (managers, employees and specialists). In most cases the items focusing on different groups can be combined to form an internally consistent scale. However, firms did differentiate between these groups. Means differed and, in a few cases, the items referring to the different groups were not part of a single scale (*eg* items for frequency performance measurement and the use of specialised firms in selection cluster for managers and specialists/professionals, but not for employees). Thus, assuming that organisations use only a single set of practices may sometimes lead to the wrong conclusions (depending on the practice one is interested in). Other groups (such as core versus temporary employees) could also be of interest here. Future models and studies should more carefully delineate which groups of people they are describing. Research on psychological contracts and person-environment fit suggest that different groups of people may value certain HRM practices to a greater or lesser extent (*eg* Kristof, 1996; Rousseau, 1990). Thus, the effect of creating 'fit' by aligning HR practices with the needs of different groups within the organisation seems a relevant area for future research.

We also assessed the relationship between high performance work practices and organisational culture. As different informants (HR director and chief executive)

provided the practices and culture ratings, these results do not suffer from same-source bias. The rules orientation is least often correlated with high performance work practices. A negative correlation is found between the rules orientation and autonomy; more emphasis on rules and procedures implies less discretion for employees. The goal and innovative orientation (and to a lesser extent the support orientation) are positively related to several of the high performance work practices and especially to the combined set of employee skills and direction practices. Although the high correlations between some of the orientations imply that differentiating between them is problematic, some differences are found. Besides employee skills and direction, the goal orientation is explained by pay-for-performance and the innovative orientation by the extensive use of job evaluation and task analyses to improve productivity. However, future research could use different culture measures and include additional dimensions.

In this study the chief executive (or another member of the top management team) was the informant regarding culture. Thus the study provides information on the dominant values at the top of the organisation. An interesting question for future research is also whether the view of the chief executive regarding culture is similar to that of employees. If views within the organisation on culture are highly similar, one could speak of a homogeneous or strong culture, if not of a weak culture. A strong culture would imply more shared norms and values and a shared view on 'how we do things around here'. It would be interesting to test whether high performance work systems tend to result in stronger cultures. It would also be interesting to assess the possible moderating role culture may have in the relationship between HRM policies and outcomes. Some HRM practices may have more prominent effects on employees in one type of organisational culture than in the other.

A number of cautions are in order. Due to the cross-sectional nature of this study, the direction of the effects could not be tested. As stated, reverse causality may play a role. Firms with better financial outcomes may have more money to spend on HRM. Thus, better economic performance may lead to more use of high performance work practices. Future research could assess such associations in a longitudinal manner. Another aforementioned concern is that firm performance measures were perceptual in nature. As the organisations were from many very different sectors (including non-profit) this was hard to avoid (*see* also Guest, 2001). We therefore also included other outcome measures, such as absenteeism, turnover and the extent to which employees go beyond contract. Also, to minimise same-source bias, two informants per organisation (the most senior HR manager and the chief executive) participated. Our sample was diverse and came from different sectors. Future work could tailor models of high performance work systems or practices more specifically to the context. For example, Boxall (2003) notes that many models originate in the manufacturing context and presents a set of propositions regarding HR strategy in services.

CONCLUSION

This study assessed the high performance work practices/outcomes link in a sample of 175 Dutch firms. An extensive (yet not exhaustive) set of practices mentioned in the high performance work systems literature was included in the study. We found a combination of practices involving rigorous selection, extensive employee development and an overarching philosophy. Several other high performance work practices we measured, such as autonomy, pay-for-performance, profit sharing and information sharing, did not cluster and were analysed separately. The set of practices labelled 'Employee skill and direction' and several of the other practices were positively related

to workers' willingness to go beyond contract and perceived economic performance of the firm and negatively to absenteeism. Also, relationships with organisational culture dimensions were found. Thus, our results suggest that the highly institutionalised Dutch context left sufficient room for firms to distinguish themselves in terms of high performance work practices.

The high performance work systems literature tends to focus rather narrowly on the relationship between such systems and hard indicators of firm performance. Boxall and Purcell (2003) present a much broader view of HRM and its goals and outcomes that can help to shape future studies in this area. They argue that HRM can have different goals and is concerned with three aspects of performance that contribute to the organisation's viability, namely its productivity, flexibility and legitimacy. Strategic tension may arise where goals are incompatible (*eg* in striving for long-term agility as well as short-term responsiveness where flexibility is concerned). In their analysis of the productivity aspect of performance, Boxall and Purcell (2003) call attention to the importance of cost-effectiveness. The high performance work system found in this study incorporates rigorous selection and extensive internal development and thus reflects a relatively expensive, high-skill model of labour management. When does investing in such expensive HR practices make sense in terms of cost effectiveness? Such questions can be considered in future studies taking the multiple goals of HRM into account.

Also, as Godard (2001) points out, what many view as best practice for employers may not also be best practice for workers. This is related to the aforementioned legitimacy goal. Firms operate within societies and are bound by their social norms and legislation, which is clearly important in the institutionalised Dutch context of this study. Elements of social legitimacy also include the firm's reputation as an employer, its impact on the natural environment, ethics and social responsibility. Like many studies on high performance work systems, our study focuses more on managers' perspectives and perceptions than on employee outcomes and voices. Ideally, future work assesses both hard firm performance and worker outcomes (*see*, for example, Appelbaum *et al*, 2000). As Boxall and Purcell (2003: 19-20) point out: 'Studies of high performance work systems should include data on costs and benefits for both companies and workers because worker motivation and broader legitimacy are unlikely to improve if only management gains.'

Acknowledgement

The authors would like to thank two anonymous reviewers for their constructive comments and suggestions.

REFERENCES

Appelbaum, E., Bailey, T., Berg, P. and Kalleberg, A. (2000). *Manufacturing Advantage: Why High Performance Systems Pay Off*, Ithaca, NY: ILR Press.

Arthur, J.B. (1992). 'The link between business strategy and industrial relations systems in American steel minimills'. *Industrial and Labor relations Review*, 45: 3, 488-506.

Arthur, J.B. (1994). 'Effects of human resource systems on manufacturing performance and turnover'. *Academy of Management Journal*, 37: 3, 670-687.

Bae, J. and Lawler, J.J. (2000). 'Organizational performance and HRM in Korea: impact on firm performance in an emerging economy'. *Academy of Management Journal*, 43: 3, 502-517.

Baetz, M.C. and Bart, C.K. (1996). 'Developing mission statements which work'. *Long Range Planning*, 29: 4, 526-533.

Batt, R. (2002). 'Managing customer services: human resource practices, quit rates and sales growth'. *Academy of Management Journal*, 45: 3, 587-597.

Becker, B.A. and Gerhart, B. (1996). 'The impact of human resource management on organizational performance: progress and prospects'. *Academy of Management Journal*, 39: 4, 779-801.

Becker, B.A. and Huselid, M.A. (1998). 'High performance work systems and firm performance: a synthesis of research and managerial applications'. *Research in Personnel and Human Resources Management*, 16, 53-101.

Boselie, P. and Dietz, G. (2003). 'Commonalities and contradictions in research on human resource management and performance'. Paper presented at the Academy of Management Meetings in Seattle, August 2003.

Boselie, P., Paauwe, J. and Jansen, P. (2001). 'Human resource management and performance: lessons from the Netherlands'. *International Journal of Human Resource Management*, 12: 7, 1107-1125.

Boxall, P. (2003). 'HR strategy and competitive advantage in the service sector'. *Human Resource Management Journal*, 13: 3, 5-20.

Boxall, P. and Purcell, J. (2003). *Strategy and Human Resource Management*, Houndsmills: Palgrave-Macmillan.

Brewster, C. and Hegewisch, A. (eds.) (1994). *Policy and Practice in European Human Resource Management*, London: Routledge.

Deal, T.E. and Kennedy, A.A. (1982). *Corporate Cultures: The Rites and Rituals of Corporate Life*, Reading, MA: Addison-Wesley.

Delaney, J.T. and Huselid, M.A. (1996). 'The impact of human resource management practices on perceptions of organizational performance'. *Academy of Management Journal*, 39: 4, 949-969.

Delery, J.E. (1998). 'Issues of fit in strategic human resource management: implications for research'. *Human Resource Management Review*, 8: 3, 289-309.

Delery, J.E. and Doty, D.H. (1996). 'Modes of theorizing in strategic human resource management: tests of universalistic, contingency and configurational performance predictions'. *Academy of Management Journal*, 39: 4, 802-835.

Den Hartog, D.N., Van Muijen, J.J. and Koopman, P.L. (1996). 'Linking transformational leadership and organizational culture'. *Journal of Leadership Studies*, 3: 4, 68-83.

Denison, D.R. (1996). 'What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars'. *Academy of Management Review*, 21: 3, 619-654.

Dillman, D.A. (1978). *Mail and Telephone Surveys: The Total Design Method*, New York: Wiley.

Dyer, L. and Reeves, T. (1995). 'Human resource strategies and firm performance: what do we know, where do we need to go?' *The International Journal of Human Resource Management*, 3: 6, 656-70.

Fletcher, C. (2001). 'Performance appraisal and management; the developing research agenda'. *Journal of Occupational and Organizational Psychology*, 73: 4, 473-487.

Gerhart, B. (1999). 'Human resource management and firm performance: measurement issues and effect on causal and policy inferences'. *Research in Personnel and Human Resource Management*, 4, 31-51.

Gerhart, B., Wright, P.M. and McMahan, G. (2000a). 'Measurement error in research on the human resource and firm performance relationship: further evidence and analysis'. *Personnel Psychology*, 53: 4, 855-872.

Gerhart, B., Wright, P.M., McMahan, G. and Snell, S.A. (2000b). 'Measurement error in research on the human resource and firm performance: How much error is there and how does it influence effect size estimates?' *Personnel Psychology*, 53: 4, 803-834.

Godard, J. (2001) 'High performance and the transformation of work? The implications of alternative work practices for the experience and outcomes of work'. *Industrial and Labor Relations Review*, 54: 4, 776-805.

Guest, D.E. (1994). 'Organizational psychology and human resource management: towards a European approach'. *European Work and Organizational Psychologist*, 4: 3, 251-270.

Guest, D.E. (1997). 'Human resource management and performance: a review and research agenda'. *The International Journal of Human Resource Management*, 8: 3, 263-276.

Guest. D.E. (1999). 'Human resource management: the workers' verdict'. *Human Resource Management Journal*, 9: 3, 5-25.

Guest, D.E. (2001). 'Human resource management: when research confronts theory'. *International Journal of Human Resource Management*, 12: 7, 1092-1106.

Guest, D.E. and Peccei, R. (1994). 'The nature and causes of effective human resource management'. *British Journal of Industrial Relations*, 32: 2, 219-41.

Guthrie, J.P. (2001). 'High-involvement work practices, turnover, and productivity: evidence form New Zealand'. *Academy of Management Journal*, 44: 1, 180-190.

Huselid, M.A. (1995). The impact of human resource management practices on turnover, productivity and corporate financial performance'. *Academy of Management Journal*, 38: 3, 635 672.

Huselid, M.A., Jackson, S.E. and Schuler, R.S. (1997). 'Technical and strategic human resource management effectiveness as determinants of firm performance'. *Academy of Management Journal*, 40: 1, 171-188.

Ichniowski, C., Kochan, T.A., Levin, D., Olson, C. and Strauss, G. (1996). 'What works at work: overview and assessment'. *Industrial Relations*, 35: 3, 299-333.

Ichiniowski, C., Shaw, K. and Prenushi, G. (1997). 'The effects of human resource management practices on productivity: a study of steel finishing lines'. A*merican Economic Review*, 87: 3, 291-313.

Ichniowski, C. and Shaw, K. (1999). 'The effects of human resource management practices on economic performance: an international comparison of US and Japanese plants'. *Management Science*, 45: 5, 704-721.

Kerr, S. and Slocum, J.W. Jr. (1987). 'Managing corporate culture through reward systems'. *Academy of Management Executive*, 1: 2, 99-108.

Klemm, M., Sanderson, S. and Luffman, G. (1991). 'Mission statements: selling corporate values to employees'. *Long Range Planning*, 24: 3, 73-78.

Koch, M.J. and McGrath, R.G. (1996). 'Improving labour productivity: human resource management policies do matter'. *Strategic Management Journal*, 17: 5, 335-354.

Kristof, A.L. (1996). 'Person-organization fit: an integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49: 1, 1-49.

Larwood, L., Falbe, C.M., Kriger, M.P. and Miesing, P. (1995). 'Structure and meaning of organizational vision'. *Academy of Management Journal*, 38: 3, 740-769.

Legge, K. (1995). *Human Resource Management: Rhetorics and Realities*, London: Macmillan.

Lepak, D.P. and Snell, S.A. (2002). 'Examining the human resource management architecture: the relationship among human capital, employment and human resource configurations'. *Journal of Management*, 28: 4, 517-543.

Mabey, C. and Salaman, G. (1995). *Strategic Human Resource Management*, Oxford: Blackwell.

MacDuffie, J.P. (1995). 'Human resource bundles and manufacturing performance: organisational logic and flexible production systems in the world auto industry'. *Industrial and Labor Relations Review*, 48: 2, 197-221.

Osterman, P. (1994). 'How common is workplace transformation and how can we explain who adopts it? Results from a national survey'. *Industrial and Labor Relations Review*, 47: 2, 173-188.

Ouchi, W.G. (1981). *Theory Z*, Reading, MA: Addison-Wesley.

Pfeffer, J. (1994). *Competitive Advantage Through People*, Boston, MA: Harvard University Press.

Purcell, J. (1999). 'Best practice and best fit: chimera or cul-de-sac?' *Human Resource Management Journal*, 9: 3, 26-41.

Quinn, R.E. (1988). *Beyond Rational Management: Mastering the Paradoxes and Competing Demands of High Performance*, San Francisco: Jossey-Bass.

Rogg, K.L., Schmidt, D.B., Schull, C. and Schmitt, N. (2001). 'Human resource practices, organizational climate and customer satisfaction'. *Journal of Management*, 27: 4, 431-449.

Rousseau, D.M. (1990). 'New hire perceptions of their own and their employer's obligations: a study of psychological contracts'. *Journal of Organizational Behavior*, 11: 5, 389-400.

Schein, E.H. (1992). *Organizational Culture and Leadership (2nd ed)*, San Francisco: Jossey-Bass.

Sidhu, J. (2003). 'Mission statements: is it time to shelve them?' *European Management Journal*, 21: 4, 439-446.

Snell, S.A. and Dean, J.W. (1992). 'Integrated manufacturing and human resource management practices'. *Academy of Management Executive*, 3, 207-219.

Storey, J. (ed.) (1995). *Human Resource Management: A Critical Text*, London: Routledge.

Vandenberg, R.J., Richardson, H.A. and Eastman, L.J. (1999). 'The impact of high involvement work processes on organizational effectiveness'. *Group and Organization Management*, 24: 3, 300-339.

Van Muijen, J.J. Van Koopman, P.L., Dondeyne, P., De Cock, G. and De Witte, K. (1992). 'Organizational culture, the development of an international instrument for comparing countries' in *Proceedings of the Second European Congress of Psychology*. G. Hunyady (ed). Budapest: Ke Szult.

Van Muijen, J.J., Koopman, P.L. and associates (1999). 'Organizational culture: the FOCUS questionnaire'. *European Journal of Work and Organizational Psychology*, 8: 4, 551-568.

Verburg, R.M. (1998). 'Human resource management: optimale praktijken en configuraties'. (Dissertation Vrije Universiteit Amsterdam) Amsterdam: Kurt Lewin Institute.

Whitener, E.M. (2001). 'Do "high commitment" human resource practices affect employee commitment? A cross-level analysis using hierarchical linear modelling'. *Journal of Management*, 27: 5, 515-535.

Wright, P.M. and Boswell, W.R. (2002). 'Desegregating HRM: a review and synthesis of micro and macro human resource management research'. *Journal of Management*, 28: 3, 247-276.

Wright, P.M. Dunford, B.B. and Snell, S.A. (2001). 'Human resources and the resource based view of the firm'. *Journal of Management*, 27: 6, 701-21.

Wright, P.M. and McMahan, G.C. (1992). 'Theoretical perspectives for strategic human resource management'. *Journal of Management*, 18: 2, 295-320.

Wright, P.M. and Sherman, S. (1999). 'Failing to find fit in strategic human resource management: theoretical and empirical problems' in P. Wright, J. Dyer, J. Boudreau and G. Milkovich (eds). *Research in Personnel and Human Resource Management, Supplement 4*. Greenwich, CT: Jai Press.

Wright, P.M. and Snell, S.A. (1998). 'Toward a unifying framework for exploring fit and flexibility in strategic human resource management'. *Academy of Management Review*, 23: 4, 756-772.