

# Human Resource Management Configurations, Performance and Innovativeness.

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## Abstract

This study examined human resource management (HRM) configurations. A typology consisting of four bundles of aligned HRM practices (labeled the bureaucratic, market, professional, and flexibility bundle) linked to organizational structures was developed. Support for the proposed ideal-typical bundles was found in an assessment by a panel of experts. Next, the distance between the ideal types and actual bundles of HR practices was assessed for 175 organizations. For each, senior HR managers' ratings of HRM practices and CEO ratings of outcomes were obtained. Support was found for two of the four proposed types. No support was found for the 'fit hypothesis' in general (i.e. the closer an observed HR bundle resembles any ideal type, the higher organizational performance). However, fit with one specific type of bundle did relate positively to outcomes. Organizations with observed HRM practices fitting the proposed professional bundle score significantly higher on measures of firm performance, employees' going beyond contract, and firm innovativeness.

## Theoretical background

A substantial body of Human Resource Management (HRM) research has investigated the relationship between HRM and different indicators of organizational performance (e.g. Arthur, 1992; Batt, 2002; Guthrie, 2001; McDuffie, 1995; Becker & Gerhart, 1996; Huselid, 1995; Ichniowski & Shaw, 1999). Overall, results suggest substantial benefits from effectively managing human resources, although many questions remain unanswered (e.g. Delery, 1998; Wright & Sherman, 1999; Wright & Snell, 1998). One such question is addressed here and concerns whether and how HRM practices may enhance or complement each other. Baird and Meshoulam (1988) and others have argued that HRM practices need to fit key aspects of the organizational context, such as the organizational structure or form. Similarly, Delery and Doty (1996) identify three different ways of analyzing the link between HR practices and organizational performance, which they label the universalistic, the contingency and the configurational approach. The universalistic approach focuses on the effectiveness of individual HR practices, irrespective of each other or the wider context, whereas the basic premise of the contingency approach is that HR policies need to be in line with the context in which they operate to have beneficial effects. The configurational approach is of interest here and focuses on how coherent 'patterns' of HRM practices (rather than single practices) are related to dependent variables. Unique combinations of HR practices (sometimes labeled 'systems' or 'bundles') are assumed to enable the organization to achieve its goals including high performance (e.g. Arthur, 1992, 1994; MacDuffie, 1995; Delery & Doty, 1996). According to Ichniowski et al. (1997), such combinations of HRM practices have bigger effects on productivity than the sum of the component effects (the assumption is that synergistic effects take place, resulting in maximal performance). Also, multiple unique configurations may result in such maximal performance - the assumption of equifinality (see Doty & Glick, 1994). The current study develops and tests a configurational model of HRM. First, we developed a typology consisting of four sets of aligned HRM practices (labeled bureaucratic, market, professional, and flexibility) and operationalized the bundles in questionnaire items. A panel of experts assessed these configurations to test the validity of the theoretical model. Then, we empirically assessed the distance between the theoretical ideal types and actual bundles of HR practices in 175 organizations to test our hypotheses.

An interesting question is how exactly HRM practices are ideally aligned. In other words, what are configurations based on? Different bases are possible. For example, Snell (1992) studied how HRM practices may hinge on a firm's strategic and administrative context. He combines practices into three control systems (input, behavior, and output control). Lepak and Snell (1999, 2002) link the human capital characteristics of uniqueness and strategic value with different employment modes (knowledge-based employment, job-based employment, contract work, and alliance/partnership). These, in turn, should have matching HR configurations (commitment-based, productivity-based, compliance-based, and collaborative). Rubery, Earnshaw, Marchington, Cooke and Vincent (2002) describe how changing organizational forms affect the nature of the employment relationship. Thus, organizational structures may also form a basis for such configurations (see e.g. Begin, 1992; 1993). The model developed in this paper (depicted in figure 1 below) proposes four types of HRM systems. It was inspired by the work of Begin (1992, 1993), linking HRM configurations to organizational structures. Begin's HRM model is based on Mintzberg's work on structuring. Mintzberg (1979; 1983) formulated four ideal-typical organizational structures based on relationships between external and internal factors. The external factors include the stability of the market in which a firm operates, the level of required knowledge, diversity and hostility. Internal influences include size, age, level of technology and power structure. Two flexible organizational structures (adhocracy and simple structure) and two bureaucratic structures (machine and professional) are discerned (see table 1).

Table 1: Typology of organizational structures by Mintzberg (1983, p.144)

	<b>stable environment</b>	<b>dynamic environment</b>
<b>Complex technology</b>	<b>Professional bureaucracy</b> Decentralized Bureaucratic (standardization of skills)	<b>Adhocracy</b> Decentralized Organic (mutual adjustment)
<b>Simple technology</b>	<b>Machine bureaucracy</b> Centralized Bureaucratic (standardization of work processes)	<b>Simple structure</b> Centralized Organic (direct supervision)

Begin (1992; 1993) saw organizational structure as a key factor in shaping HRM. He describes a system of HRM for each of the four ideal structure types represented in table 1. Thus, he presents a simple, a machine, an adhocratic, and a professional HRM system. For instance, Begin holds that HRM in the simple structure will be limited and informal, whereas the HRM system in the machine bureaucracy would entail extensive, formal, and centralized practices (e.g. stressing job design and division of labor, limited employee development, and low participation). Begin also postulates that these HRM systems will have different effects on outcomes such as competence, commitment, efficiency/cost effectiveness, and numerical and functional flexibility. For instance, the simple HRM system would yield high numerical and functional flexibility but low commitment, the machine system low functional flexibility and low commitment, and the professional system results in low cost effectiveness but high commitment. Begin contributes to the literature by conceptually linking HRM to organizational structure; however, his model has never been empirically tested. Also, several aspects of the model are somewhat problematic. One is that Begin does not sufficiently specify the nature of the HRM practices that make up the four ideal HRM systems. Also, the dimensions underlying his HRM bundles are the same as Mintzberg's dimensions for structuring. However, the proposition that organizational structure and HRM can be linked conceptually does not necessarily imply that both concepts should necessarily be grouped along the same conceptual dimensions. Thus, like Begin, we sought to link HRM to the structuring of organizations. However, in contrast with Begin, the underlying dimensions we propose are more specific to the realm of managing the employment relationship and HRM. The two dimensions underlying our model of ideal types of HRM are: 1. The goal of the HRM policy (does the company have a 'commitment philosophy' or adopt a 'compliance strategy' (cf. Walton, 1985); and, 2. The level of flexibility and employability that the organization strives for (e.g. is the company or the individual seen as responsible for employee development and employability).

*Compliance versus commitment.* The first dimension on which HRM policies may be differentiated describes whether the overall objective of the employment strategy is control / compliance or commitment. This difference between aiming for control or commitment was introduced by Walton (1985) and it has recurred in the study of HRM since. Walton contrasts so-called traditional work systems that are characterized by close supervision, narrowly defined jobs and no career development with high commitment work systems that highlight more broadly

defined jobs, concern for learning and growth and a larger role of the team in performance evaluations. This idea is central in several configurational models. Arthur (1992) built on this distinction and contrasted control and commitment HRM systems. The aforementioned model by Lepak and Snell (1999; 2002) also includes a commitment-based and a compliance-based HR configuration. In their model, compliance-based HR is found most often when uniqueness and strategic value of human capital are low, whereas commitment-based HR is found most often when these are high.

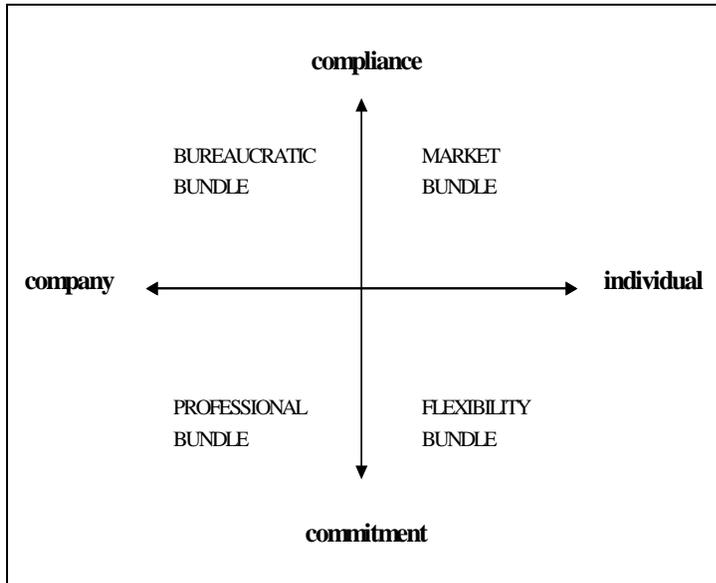


Figure 1: Proposed typology of bundles of human resource management

*Individual versus organization.* From the '80s onwards, many corporations downsized and restructured to become more flexible in response to environmental factors, such as increasing competition and rapid technological changes. For employees in many sectors, this has increased job insecurity and the need to be adaptive. Ideas of 'cradle-to-grave' employment are no longer valid (Hall & Mirvis, 1995). Until recently it was common for people to spend their entire career in one or two organizations. Careers progressed in linear stages monitored and planned by the organization. Success was defined by the organization and measured through promotions and increases in wages (Sullivan, 1999). More recently, organizations have stimulated employees to be less dependent on their employers for job security and personal and career development. In line with this change in typical career patterns, the psychological contract between employers and employees is changing. In the 'traditional' career workers exchanged job security and planned advancement for loyalty. Under the emerging contract, workers will exchange performance for continuous learning and marketability. Employees rather than corporations are responsible for their own career management. Employees will stress developing transferable rather than firm specific skills. Learning is mostly done on the job rather than through formal programs and success is measured by the feeling of doing psychologically meaningful work and no longer only through status, pay and promotion (Sullivan, 1999). This is the first aspect of the employability/flexibility HRM dimension deals with. It describes the locus of responsibility for employee development. In some organizations strong corporate responsibility is still assumed for the (career) development of employees whereas in others individual employees are now primarily responsible for their own (career) development. The second is flexibility. As stated, for many organizations, environmental turbulence has increased and flexibility is a key concern. Flexibility is related to the existence and pervasiveness of rules and regulations. Companies with many rules and regulations stress corporate responsibility for outcomes. Rules and procedures form the basis for their coordination of efforts (standardization of behavior). Such organization-centered structures tend to be bureaucratic and low on flexibility. In contrast, organizations with less emphasis on rules and regulations tend to put more responsibility for outcomes in the hands of individual employees. In control terms, organizations relying heavily on rules or direct supervision emphasize behavior and/or output control (Snell, 1992). Behavior control assumes managerial knowledge of cause – effect relationships, making it possible to prescribe and judge appropriate behavior. If desired outcomes or standards of performance are clear and measurable, organizations may also use output control, where rewards are based on reaching predetermined performance targets. In turbulent environments, desired behavior and performance standards may be ambiguous or changeable, which makes relying on predetermined rules or performance targets to coordinate employees' efforts more difficult.

Combining the two dimensions described above leads to four ideal typical forms of HRM, which are described as the *bureaucratic bundle*, the *market bundle*, the *professional bundle* and the *flexibility bundle* (see figure 1). Both the *professional* and the *flexibility bundle* assume a commitment philosophy. They differ in who is seen to be responsible for employee development and careers. In the flexibility bundle, individual employees are, to a large extent, responsible for their own development and few rules govern the process, whereas in the professional bundle, development is seen as a task of the organization and is more carefully regulated. The *bureaucratic* and *market bundle* stress compliance. The bureaucratic bundle can be seen as 'classical personnel management' traditionally found in large bureaucratic organizations. Extensive sets of rules and regulations are common. The *market bundle* has far fewer rules in place, direct supervision is common. Individuals are responsible for their own development.

The bureaucratic configuration is related to Mintzberg's machine bureaucracy. It consists of a bundle of practices acting as behavior control mechanisms, such as rules and regulations for coordinating large groups of lower-skilled employees. Rules govern the production process and help maintain efficiency. Employees' tasks are narrowly defined and required skills are limited. As tasks and skill sets are narrowly defined employees usually do not have many opportunities for further development. Large personnel departments are responsible for developing and executing formal procedures that prescribe how to manage the workforce. Examples of this model are most likely to be found in traditional bureaucratic organizations (e.g. in the heavy industrial sector). In this configuration, recruitment and selection are formal, yet simple procedures. Recruitment tends to be relatively easy, as the core production process primarily consists of standardized and relatively simple tasks. The personnel department is leading in the selection of employees and the use of more expensive methods of recruitment and selection (e.g. tests, outsourcing) is rare. Rather, standardized application forms and interviews are used for recruitment and selection. The standardized production process calls for a system of compulsory and formalized training with strong emphasis on technical skills. Employees are not primarily responsible for taking initiative to update their skills and knowledge as the company takes the lead in this. Some internal training possibilities may exist, but the overall opportunities for promotion and development are limited and the organization spends little money on training and development of employees. Management development programs aimed to increase functionally flexibility of managers are rare, as the stable market does not call for such flexibility or anticipation of change. A strongly formalized reward system is standard. Group appraisals and rewards are rare due to the fact that the production process is broken down into narrowly defined separate tasks. Performance measures are clear and performance evaluation involves the use of standardized evaluation forms. The overall HRM policy is designed in order to maximize control over the production process and compliance rather than to enhance commitment.

The professional configuration also has many rules and regulations, but far less emphasis is found on behavior control mechanisms. A system of output control is more common. It is related to Mintzberg's professional bureaucracy as core production consists of complex tasks. HRM policy aims to enhance employee commitment. A large, central personnel department is responsible for setting out policy, although execution tends to be decentralized. The company usually employs highly educated professionals, whom the company aims to accommodate and develop. This type of personnel management may, for instance, be found in public service organizations with a strong focus on quality within a stable market environment (e.g. hospitals, research institutions). Recruitment and selection aim to attract an exclusive group of highly skilled professionals and are mostly decentralized. The central personnel department assists units trying to hire newcomers (providing information, forms, etc). Selection is primarily done through interviews. Psychometric tests and assessment centers may also be used as selection methods, although outsourcing to specialized firms is rare. Although the highly specialized professionals feel personally responsible for keeping their knowledge and skills up to date, the organization provides support for training and development activities. There are usually no (or very limited) compulsory training courses. The organization offers sufficient promotion opportunities and promotion from within is a common practice. Promotion and development are often guided by formal systems of career development, such as management development programs. Performance appraisals are done by superiors, aided by performance criteria developed by the personnel department. Team performance may be part of the appraisal process. Employees are primarily rewarded through a fixed salary tied to a formal job classification system, bonus systems are usually limited. The company may have developed a formalized HRM policy and mission statement. As the core activities of the organization call for high levels of specialized knowledge, the emphasis in the employment policy is on development of personnel. Commitment is also an important driving force for the policy as this specialized group of employees is hard and expensive to replace.

In the market bundle, the HRM policy is hardly developed and few formal procedures with regard to HRM practices are in place. It is often the owner/founder of the business who is responsible for setting out the employment policy. High levels of direct supervision are found, combined with a limited number of explicit rules and regulations to maintain flexibility. The organization may offer its employees nothing more than a salary for their efforts. Core production calls for a lower skilled work. Employees usually do not perceive clear opportunities for further development within the firm. Examples of companies with a market model of HRM may include small businesses or start-ups in the area of construction, restaurants or industrial services. Informal procedures with regard to recruitment and selection are typical here. The lower skilled (and often temporary) employees are usually relatively easy to recruit and selection is done through an informal interview with 'the boss'. Application forms or formal tests are not used. There are no explicit funds for employee development. Compulsory training in order to obtain some necessary skills may be needed, but such needs are determined and dealt with on a case-to-case basis. Only few opportunities for promotion tend to be available due to the small scale of the business. Rewards are based on informal procedures and there is no formal system of job specifications or classifications. The informal nature of the reward practices may lead to a system of ad-hoc bonuses. Group performance may play a role in this. Performance appraisal is based on the manager's perception of employees' performance and is often based on whether a set of pre-determined goals or targets was met. Overall policy aims at remaining (numerically) flexible and not at enhancing commitment.

The flexibility configuration emphasizes commitment of individual employees. Few formal rules and procedures are in place. The company is in a continuous process of alignment with customer needs in a turbulent market. Tasks are broadly defined and functional flexibility of employees' is a prerequisite for success. Rather than developing specialized skills and knowledge that are of use in stable and well-defined tasks, employees will need to be broad professionals that can perform different tasks when needed. Although organizations do not offer much job security in this turbulent environment, they do aim for commitment in order to keep their well-trained and flexible employees (as long as they are needed). Creating their own job security is seen as the responsibility of individual employees, who need to keep themselves "employable" for future jobs within or outside of the present company. The company offers opportunities for development, but employees themselves need to take the responsibility for developing in any given area. Rather than having a large personnel department, the responsibility for the execution of many HR tasks lies in the hands of line managers, who are supported by a few internal or even external HR consultants. Examples of firms that may use the flexibility model can be found in the area of advanced technology, international trade, and professional services. Recruitment and selection of well-educated and able professionals is central to this bundle of HRM practices. Psychometric tests and assessment centers are often used as tools for selection. Activities in this area are often outsourced to a specialized recruitment and selection firm. There are few formal procedures. Line managers rather than the personnel department are responsible for hiring their own new staff. As jobs are very broadly and flexibly defined, there is no formal system of job classifications or task descriptions. Rewards usually entail a base salary in combination with substantial pay-for-performance plans. Both individual and group bonuses may be used. Company or departmental results play an important role in performance appraisals. There are no standard forms and there is no formal system of sanctions. There are no compulsory training courses and employees are personally responsible for keeping up to date in their field (often the company does fund development activities at the individual's request). There is no formal management development system, but there are still ample opportunities for promotion and development (mostly at the initiative of the employee). The overall aim of the policy is commitment of employees, who are highly educated and difficult (and expensive) to replace.

The main differences between the four proposed bundles of HRM practices are summarized in table 2. The four bundles may be divided in two rules and procedure-oriented or 'bureaucratic' bundles (labeled bureaucratic and professional) and two less formalized or 'flexible' bundles (labeled market and flexibility). Within the professional and flexibility bundle, opportunities for development are plentiful, whereas in the bureaucratic and market bundle the possibilities for long-term development are practically non-existent. As described above, the design and execution of the HRM practices and policies differ among the bundles. Both the bureaucratic and professional bundle, have a substantial personnel department. The role of this department in the execution of the HRM practices differs, from a leading role in the bureaucratic to a supportive role in the development bundle. In the market bundle the founder/owner is leading in the design and execution of the HRM policy. In the flexibility bundle this responsibility is for line managers. The four proposed bundles consist of unique combinations of aligned HR practices. For instance, the way in which employees are selected is in line with the way in which employees are rewarded and developed and both are based on what fits the context. The four bundles may all be effective ways of managing human resources. In line with the configurational approach to HRM, such aligned combinations of practices that reflect what is needed in a given context are expected to be effective. Thus, we hypothesize that 'fit' is

effective, in that firms that have practices that fit the proposed bundles outperform firms in which practices are not aligned on different measures of firm performance: Hypothesis (1) Firms in which HR practices reflect any of the proposed bundles will outperform firms in which HR practices do not show any fit.

Table 2: Differences between the four bundles on two dimensions

	Corporate responsibility	Individual responsibility
	<b>Bureaucratic bundle</b>	<b>Market bundle</b>
Compliance	<ul style="list-style-type: none"> <li>• Many rules and procedures</li> <li>• Few opportunities for development</li> <li>• Personnel Department</li> </ul>	<ul style="list-style-type: none"> <li>• Few rules and procedures</li> <li>• Few opportunities for development</li> <li>• Founder/owner (MD)</li> </ul>
	<b>Professional bundle</b>	<b>Flexibility bundle</b>
Commitment	<ul style="list-style-type: none"> <li>• Many rules and procedures</li> <li>• Many opportunities for development</li> <li>• Department (in accordance with Personnel Department)</li> </ul>	<ul style="list-style-type: none"> <li>• Few rules and procedures</li> <li>• Many opportunities for development</li> <li>• Line Managers</li> </ul>

The combination of HR practices may achieve their success through different means, in other words, lead to different outcomes. In the professional and flexibility bundle, the overall aim of the HRM policy is enhancing commitment rather than gaining compliance. In a commitment-focused model, employees should be more willing to do more than what is strictly specified in their formal contracts. In other words they are more likely to ‘go beyond contract’: Hypothesis (2) Employees in firms where HR practices reflect professional and flexibility bundles will be more likely to go beyond the call of duty than employees in firms with HR practices that do not fit these bundles.

Although the market and bureaucratic bundle are expected to be effective within their specific context (see hypothesis 1), a side effect of such models could be that the strong emphasis on rules, regulations and sanctioning may lead to higher levels of employee turnover. In contrast, firms with HRM bundles emphasizing commitment are likely to have lower levels of turnover. Thus: Hypothesis (3a) Companies whose HR practices reflect bureaucratic or market bundles will show higher levels of employee turnover than firms with HR practices that do not fit these bundles, and: Hypothesis (3b) Companies whose HR practices reflect professional or flexibility bundles will show lower levels of employee turnover than firms with practices that do not fit these bundles. HRM is often related to firm performance; however, the relationship to firm innovativeness is also relevant. Some bundles seem more likely to create an environment conducive to creativity, change and innovation than others. For example, West and Altink (1996) suggest that a climate of psychological safety is needed for employees to be willing to engage in risk taking, innovative efforts and Edmondson (1999) showed that such psychological safety was positively related to learning in teams. HRM bundles focusing on commitment seem more likely than those focusing on compliance to enhance innovativeness through creating an environment in which there is room for employees to be creative and innovate. Also, a meta-analysis by Damanpour (1991) showed that structural characteristics, such as centralization and formalization of the organization are negatively related to innovation. The strong emphasis on sanctioning, stability and rules makes it less likely that firms with a bureaucratic bundle offer an environment or climate conducive to creativity and innovativeness. In contrast, flexibility and professional bundles seem more likely to enhance innovativeness. Thus: Hypothesis (4a) Companies whose HR practices reflect the bureaucratic bundle will show lower levels of firm innovativeness, and Hypothesis (4b) Companies whose HR practices reflect professional and flexibility bundles will show higher levels of firm innovativeness.

## Method

In order to test the hypotheses with regard to the bundles of HR practices it is necessary to design a measure of fit between the actual HR practices of an organization in the sample and the four proposed theoretical bundles. To do so, we first selected a measure of HRM-practices and defining the four bundles in terms of their likely scores on its 30 items. Table 3 presents proposed scores for each item on each bundle. Before using this operationalization in a field study among organizations, we tested it. A panel of 8 experts in the field of the management and organization were given a brief and general description of the four bundles and a longer list of 76 HRM items. They were then asked to what extent items reflected the four bundles. Of these, only 30 items were indicators for the clustering of the four bundles (see table 3). The reason for providing more items than the 30 used for the bundles was to make it less obvious for raters to see patterns in the items. The scores of 8 experts on the 30 relevant items were compared with the proposed scores presented in table 3. Cohen’s kappa ( $\kappa$ ) was used to measure the extent to which the individual judges agreed with each other and with the proposed scores. This is a measure of

interrater agreement assessing the deviation between two raters taking the possibility of a chance agreement between raters into account. All kappa's were positive with an average value of .38 for both the bureaucratic and flexibility bundle, .35 for the professional, and .39 for the market bundle. In addition to Cohen's kappa the 'multi-rater kappa' ( $\kappa_v$ ) as developed by Fleiss (1971) was computed (see Siegel & Castellan, 1988). With Fleiss' kappa we can test whether  $\kappa_v$  is significantly greater than chance agreement ( $\kappa_v = 0$ ). Due to a few missing values  $\kappa_v$  was computed twice per bundle, with missing values imputed such that a maximum and a minimum value were obtained. All values were significantly greater than zero. Finally, the interrater reliability of the total scores of the 8 judges was computed using the Spearman-Brown formula. The interrater reliability of the total scores was .83 for both the bureaucratic and the flexibility bundle, .81 for the professional bundle, and .84 for the market bundle. Given the level of complexity of this task, this can be regarded as high. Thus, we concluded that sufficient support existed to test the model in a field setting.

Table 3: Proposed scores on items for the Bureaucratic (1), Professional (2), Market (3), and Flexibility (4) bundle

	Items	Bundle 1	Bundle 2	Bundle 3	Bundle 4
1.	Use of a formal and written down HR strategy?	Seldom	Often	Seldom	Often
2.	Use of a mission statement	Seldom	Often	Seldom	Often
3.	Focus on creating organizational commitment among employees	Seldom	Often	Seldom	Often
4.	Use of a job classification system	Often	Often	Seldom	Seldom
5.	Use of a consulting firm for the recruitment of personnel	Seldom	Sometimes	Seldom	Often
6.	Difficulty levels in recruiting the core production (service) workers	Often	Seldom	Often	Seldom
7.	Centralization of recruitment of new employees centrally	Often	Often	Seldom	Seldom
8.	Use of application forms	Often	Often	Seldom	Seldom
9.	Use of job interviews	Often	Often	Often	Often
10.	Use of psychometric tests for selection	Seldom	Sometimes	Seldom	Often
11.	Use of assessment centers for selection	Seldom	Sometimes	Seldom	Often
12.	Use of a consulting firm for the selection of personnel	Seldom	Sometimes	Seldom	Often
13.	Does the department of the new employee make the final decision for hiring?	Often	Often	Seldom	Often
14.	Does the managing director make the final decision for hiring staff?	Seldom	Seldom	Often	Often
15.	The extent to which employees are obliged to keep their knowledge and skills up to date	Seldom	Often	Seldom	Often
16.	Percentage of the total labor cost for annual training and development?	Low	High	Low	High
17.	Compulsory training for core production (service) workers regarding technical skills	Often	Seldom	Often	Seldom
18.	Compulsory training for core production (service) workers regarding social skills	Often	Seldom	Often	Seldom
19.	Promotion from within systems	Sometimes	Sometimes	Often	Often
20.	Provision of opportunities for promotion to core production (service) workers	Seldom	Often	Seldom	Often
21.	Use of a career development system (e.g. Management Development)	Seldom	Often	Seldom	Often
22.	The extent to which rewards are related to a job classification system	Often	Often	Seldom	Seldom
23.	Rewards are comprised of a fixed base salary for production (service) workers	Often	Often	Seldom	Seldom
24.	To what extent is group performance taken into account for rewarding employees	Seldom	Often	Often	Seldom
25.	Use of a system for negative rewards (e.g. punishment and sanctions)	Often	Seldom	Often	Seldom
26.	Existence of a formal system for performance evaluation	Often	Often	Seldom	Seldom
27.	Is performance related to pre-defined production targets	Often	Seldom	Often	Seldom
28.	Performance evaluated by the direct supervisor on basis of the overall performance of employees	Seldom	Often	Often	Seldom
29.	To what extent is group performance taken into account for evaluating employees	Seldom	Sometimes	Seldom	Often
30.	Use of standard performance evaluation forms	Often	Often	Seldom	Seldom

*Sample and procedure.* The sample was drawn from the database of a professional Association for Personnel Management. All members with the job title HR executive or personnel director were selected and sent two questionnaires (n=684). The first was the Human Resource Management Inventory, a questionnaire assessing

the HRM practices of the organization. The HR executives were asked to fill these out personally. The second questionnaire they was a brief firm performance and innovativeness questionnaire to be filled out by the CEO (or if that was not possible another member of the top management team). The HR executives were asked to return both questionnaires. Three weeks after sending out the questionnaires a reminder was sent. In total, 175 complete sets of two questionnaires were returned (26% response). The sectors the participating organizations operated in varied widely and included manufacturing/production (47), trade (13), government agencies (26), health care (23), financial services/consulting (37) and miscellaneous (29). The size of organizations varied from small (fewer than 50 employees, 1.1%) to relatively large (> 1000 employees, 17,7%) and their age varies from 1 to 385 years old.

*Measures.* 2 raters (HR manager and CEO) were involved for every organization. HR managers provided information on HRM practices by filling out 30 items on HRM practice areas such as recruitment and selection, performance appraisal, pay, training and development as well as task-fulfillment (see table 3). The items are similar to those found in previous work (e.g. Huselid, 1995; Delaney & Huselid, 1996; Guthrie, 2001; Rogget al, 2001). In line with previous studies, different response formats were used (e.g. Rogget al, 2001; Vandenberg et al, 1999). 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 a practice is present. For example, HR managers indicated on five-point scales (1=never to 5=always) whether different types of selection procedures (standard forms, interviews, psychometric tests, assessment centres and specialized search firms) were used in the selection of personnel. Another example is that HR managers indicated whether or not group performance is taken into account for establishing pay and rewards (Yes or No). Table 3 provides an overview of the items used in the study. The HR managers also provided 2 outcome measures. The first asks what Guest (1997) refers to as an “HR outcome”, namely the extent to which shopfloor employees, specialists and managers tend to go beyond contract. Cronbach’s alpha was .73. A sample item is: ‘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'. The scale was labelled 'Beyond contract'. The second was the percentage of employee turnover among shop-floor employees.

General managers (CEOs) provided the other outcome measures. They filled out a firm performance scale, with 6 items focusing on areas such as profitability, projected future investments, and competitive position of the organization. Sample items: 'Within your market and sector, how would you rate you organization on market share (rated on a five-point scale from 1='Declining' to 5='Rapid expansion'); profitability (1='Strong Losses' to 5='High profits'); competitiveness (1='Very weak' to 5='Very strong')'. Cronbach’s  $\alpha$  was somewhat low (.63). Thus, interpretation of the results regarding this measure should be done with some care. CEO’s also filled out two scales on firm innovativeness. The first is a 4-item scale focusing on an external innovativeness orientation involving searching for new information in the external environment and searching for new markets. Sample items are: 'This organization searches for new markets for its products/services' and 'This organization looks for new opportunities in the external environment' (6-point scale, never to always). Cronbach’s  $\alpha$  was .85. The second is a 5-item scale on internal innovativeness orientation, describing openness to change, anticipating and stimulating innovation and experimentation within the firm. Sample items: 'How often are 'new things' tried out in this organization' 'Employees' new ideas regarding the way in the work is done in this organization are rewarded' and 'The management of this organization is open to change' (1=never to 6=always). Cronbach’s  $\alpha$  was .83. Thus, five outcome measures were used, namely beyond contract and turnover (rated by HR managers) as well as firm performance and two measures of firm innovativeness (rated by CEOs). Table 4 presents the intercorrelations between the outcome measures.

Table 4: Intercorrelations outcome measures

	1	2	3	4	5:
1 Firm Performance	1.00				
2 Beyond contract	.21*	1.00			
3 External Innov. Orient.	.50**	.27**	1.00		
4 Internal Innov. Orient.	.50**	.39**	.59**	1.00	
5 Employee Turnover	-.04	-.10	-.06	-.08	1.00

\* significance (p <.05); \*\* significance (p <.01)

*Analyses: Measuring fit.* In order to test the hypotheses, the actual HRM-practices of the companies in the sample were compared with the four bundles of HRM using pattern analysis. Pattern analysis was introduced by

Van de Ven and Drazin (1985, p.348), who describe their method as: ‘amenable to testing at the aggregate level by analyzing deviations in the pattern of a given organizational unit from its ideal type pattern or mode’. The measure of fit between the observed HRM policy of any given firm in the sample and the four proposed bundles was computed by looking at the difference between the proposed and observed scores using the following formula below. For every organization in the sample, 4 scores were computed reflecting their respective levels of fit with the four proposed theoretical bundles. The four measures of fit are the sum of the deviation per bundle, multiplied by 100. This leads to a score ranging from 0 (full fit) to 100 (full deviation). Thus, the discrepancies between the observed HRM-practices of a company and the four ideal bundles of HRM were computed. Companies with small and large discrepancies were then compared on the four outcome measures. In line with our hypothesis companies with small discrepancies between the ideal and actual type of HRM were expected to score higher on the outcome measures than the other companies in the sample whose policy did not fit ideal types.

$$D = \frac{\sum_{i=1}^k |f_i - p_i|}{k} * 100$$

With:  $k$  = number of scored items,  $f_i$  = factual score.  $p_i$  = proposed score of the bundle.

## Results

As stated, we applied the method of pattern analysis in order to see whether the actual or observed bundles of HR practices of the companies in the sample were in line with the ideal types. The discrepancies between the observed bundle of HRM-practices of a company and the four ideal bundles were computed using the discrepancy measure. This resulted in four scores ranging from 0 (full fit) to 100 (full deviation) for each company in the sample. A table with the exact discrepancy scores for all 175 organizations on all bundles is available from the authors. In this method, the cut-off point (i.e. when is discrepancy small enough to be called ‘fit’) is a matter of choice. First, we assessed scores falling in the 0 – 35 interval as sufficiently resembling an ideal type (under the condition that this should only be the case for one of the four discrepancy scores). The results show that of the 175 companies in the sample, the observed bundle of HR practices of a total of 28 organizations are in line with the one of the proposed ideal bundles (i.e. they fall in the 0 - 35 score range for one single proposed bundle). In other words, 28 companies show fit. The HR bundles of these 28 companies resembled only two of the proposed bundles, namely, the *professional bundle* ( $n = 22$ ) and the *bureaucratic bundle* ( $n = 6$ ). No companies in the sample aligned with the other two ideal bundles of HR practices (market and flexibility). When regarding the organizations in the 0 - 40 range, the number of organizations that shows internal fit rises considerably (to 65 out of 175). Four organizations have scores of 40,00 or below on two configurations, here the lowest score was used to classify the organization into a configuration (thus, only the lowest discrepancy score was considered). Thus classified, the observed HR bundles of 18 organizations fit the ideal typical bureaucratic bundle, 46 the professional bundle and 1 the market bundle. In addition to the pattern analysis, non-hierarchical cluster analyses (e.g. Ketchen & Shook, 1996) were performed to test whether another, more powerful combination of variables would arise. In addition to the 30 items used for the pattern analysis, we entered the variables size (i.e. number of employees) and age of the company as these two variables would be likely candidates for clustering the 175 cases in the sample. The non-hierarchical cluster analysis yielded a four-cluster solution, with similarities between 61, 51, 45, and 18 cases, respectively. However, it proved too difficult to theoretically interpret these four clusters. These analyses therefore gave no reason to doubt the value of the original theoretical model.

Hypothesis 1 was that companies showing internal fit (i.e. relatively small discrepancies between the ideal and observed type of HRM) were expected to outperform companies whose policy did not fit ideal types. T-tests were done, comparing the 65 companies showing fit with the 110 companies that did not show fit on the outcome measures (see table 5). The differences on firm performance were not significant. Thus, hypothesis 1 was not supported for firm performance: firms with fit do not outperform those without fit. No significant differences were found for beyond contract and employee turnover either. However, firms showing fit did score significantly higher on firm innovativeness (see table 5). Firms that showed fit scored significantly higher on both firm innovativeness measures. In the analyses below we will focus only on the two bundles that were relatively common in the sample, namely the bureaucratic and professional bundle. Hypothesis 2 proposed that for firms with an HR policy reflecting

the professional bundle, a positive relationship would be found with employees' willingness to go beyond contract (i.e. to do more for the firm than is formally required). T-tests comparing the 46 companies fit the professional bundle with the firms that did not show such fit support this hypothesis. The organizations with HR practices reflecting this bundle score significantly higher on beyond contract as well as firm performance (see table 5). Similar results were found when comparing the smaller group of 22 organizations meeting the stricter fit criterion for the professional bundle (0 – 35 range) to the 147 companies not showing fit.

Table 5: T-tests comparing organizations showing fit and not showing fit on professional / bureaucratic bundles

<b>Total (hypothesis 1)</b>	<b>Internal fit total Mean (sd)</b> n = 65	<b>No internal fit Mean (sd)</b> n = 110	<b>F-values variances</b>	<b>t-value</b>	<b>p-value (one- sided)</b>
• Firm Performance:	3.52 (.48)	3.40 (.44)	.77 (n.s.)	1.53	.12
• Beyond contract:	3.51 (.60)	3.41 (.59)	.01 (n.s.)	1.12	.27
• External Innov. Orient.	3.91 (.95)	3.46 (1.09)	1.90 (n.s.)	2.70	.01**
• Internal Innov. Orient.	3.80 (.78)	3.55 (.82)	.35 (n.s.)	1.97	.05*
• Employee Turnover:	6.31 (5.6)	7.79 (8.70)	2.31 (n.s.)	-1.17	.24
<b>Professional (hypothesis 2 and 4)</b>	<b>Internal fit professional Mean (sd)</b> n = 46	<b>No internal fit Mean (sd)</b> n = 110	<b>F-values Variances</b>	<b>t-value</b>	<b>p-value (one- sided)</b>
• Firm Performance:	3.62 (.50)	3.38 (.43)	1.17 (n.s.)	2.75	.01**
• Beyond contract:	3.66 (.55)	3.37 (.59)	.90 (n.s.)	2.87	.01**
• External Innov. Orient.	4.06 (.96)	3.47(1.05)	.91 (n.s.)	3.30	.00**
• Internal Innov. Orient.	3.98 (.73)	3.53 (.81)	.92 (n.s.)	3.18	.00**
• Employee Turnover:	6.02 (5.5)	7.67 (8.33)	2.25 (n.s)	-1.19	.24
<b>Bureaucratic (hypothesis 3 and 4)</b>	<b>Internal fit Bureaucratic Mean (sd)</b> n = 18	<b>No internal fit Mean (sd)</b> n = 110	<b>F-values variances</b>	<b>t-value</b>	<b>p-value (one- sided)</b>
• Firm Performance:	3.27 (.37)	3.47 (.47)	3.15 (n.s.)	-1.59	.11
• Beyond contract:	3.11 (.57)	3.49 (.59)	.23 (n.s.)	-2.58	.01**
• External Innov. Orient.	3.50 (.88)	3.64 (1.07)	1.55 (n.s.)	-.50	.62
• Internal Innov. Orient.	3.44 (.77)	3.67 (.82)	.84 (n.s.)	-1.10	.30
• Employee Turnover:	7.25 (6.2)	7.22 (7.9)	.07 (n.s.)	.014	.99

Mean = scale mean on the respective outcomes; sd = standard deviation Only professional and bureaucratic bundles are considered here as too few firms fit the other two configurations. F-values indicate homogeneity of variance. When significant ( $p < .01$ ), variances are regarded as heterogeneous and the T-test is adapted accordingly (s. = significant; ns = not significant).

Hypothesis 3a proposed that a bureaucratic bundle would be positively related to employee turnover. A T-test comparing the 18 organizations fitting the bureaucratic bundle with the organizations without such fit did not show a significant difference on employee turnover. However, organizations with a bureaucratic bundle did score significantly lower on beyond contract (see table 5). Hypothesis 3b was not supported; firms with a professional bundle were not lower on turnover. Hypothesis 4a and b proposed that a professional bundle would be positively and a bureaucratic bundle negatively related to firm innovativeness (see table 5). Results show non-significant differences for the bureaucratic bundle, but do support the idea that a professional bundle may be conducive to innovativeness, as firms showing fit with the professional bundle score higher on both aspects of firm innovativeness measured here (internal and external). Thus, in summary, firms with HR practices that fit the professional bundles score significantly higher on perceived firm performance, perceived firm innovativeness and employees' willingness to go beyond contract than firms whose practices do not show such fit. As such, the firms with a professional HR bundle seem to outperform those without such fit. Firms with a bureaucratic bundle do not perform better; the only significant difference is a negative one: they are significantly lower on employees' willingness to go beyond contract.

## Discussion

The aim of the current paper was to develop and test a configurational model of HRM. Here, we discuss our findings as well as the theoretical and methodological challenges researchers face when adopting such an approach. As recommended by Delery and Doty (1996), we developed a typology of ideal HRM bundles. It was based on two dimensions. The first was the overarching aim of the HRM policy (compliance versus commitment) and the second relates to flexibility and asks whether the individual or company is responsible for development and employability. Combining these results in four ideal typical bundles of HRM practices (the bureaucratic, professional, market, and flexibility bundle), that fit proposed ideal types of organizational structures. Pattern analysis shows that only two out of the four proposed configurations were reflected in the observed HRM bundles of organizations in our sample. This could be an indication of the poor nature of the conceptual model. However, before the field study was conducted, the operationalization of the four theoretical bundles was submitted to an expert rating (a panel of 8 independent judges). The model was supported in that expert rating. We would recommend such a procedure for testing the reliability and validity of operationalizations of complex configurations before taking them to the field. Thus, more likely, our results support Delery's (1998) position that relatively few firms have aligned sets of practices in place.

The lack of support for the market bundle in the field study may in part be explained by the nature of the sample. The sampling strategy (using a professional association) gave us access to people in the formal role of HR executive. This meant that most firms in the sample were not a new start-up, rather they were older, larger well-established firms with strong HR departments. One would expect the market bundle to be found mostly in younger or smaller companies and often these would not (yet) have a formal HR department or director. Also, the reason for the lack of support for the flexibility model may be due to the fact this bundle may represent a model of the future rather than an actual and common type employment management. Again, the nature of the sample (well-established, older firms) may have played a role there. The flexible nature of such companies may also mean they are smaller or less likely to have large HR departments (and members of professional HR associations).

In the current study, we did not find support for the hypothesis that companies with any form of fit (i.e. regardless of the content of practices), outperform companies that do not have an aligned bundle of HRM practices. Rather, we find support for the idea that organizations adapting *specific types of congruent bundles* may outperform others. We found that organizations having a bundle of HRM practices aimed to promote commitment rather than compliance report higher levels of employees' willingness to 'go beyond contract', more firm innovativeness and higher firm performance than companies without fit. This result is in line with results of studies focusing on high involvement or high commitment work systems (e.g. Batt, 2002; Whitener, 2001). Organizations in the sample that had HRM systems resembling the bureaucratic bundle scored significantly lower on 'beyond contract' than organizations without any fit. In other words, these results seem to support the idea that one can contrast "favourable" HRM bundles (commitment oriented) and "less favourable" bundles (compliance oriented), rather than the idea that fit itself is "always" beneficial. Our results also indicate that besides firm performance, firm innovativeness is interesting as a potential outcome in research on the effectiveness of HRM bundles. The idea that some bundles of HRM practices would help organizations to better deal with change, recognize new opportunities in the environment or create an environment that is more conducive to innovation and creativity is strongly supported in this study and deserves further research attention.

*Limitations of the study and the configurational approach.* Due to the cross-sectional nature of this study the interpretation of the results should be done with some caution, as the direction of effects is assumed rather than tested. Reversed causality may play a role, i.e. the idea that better performing firms have more money to spend on HRM practices may be as valid as the idea that having beneficial HRM practices could lead to increases in performance. Future research should assess such associations in a longitudinal manner. Another limitation of the current study is that our performance measure was perceptual in nature. As Guest (2001) points out using measures of a perceptual nature is often hard to avoid when trying to study many different types of organizations simultaneously. This also held in the current study, as the organizations in the sample were from different sectors (even including some non-profit organizations).

If we evaluate our approach (using pattern analysis), another limitation concerns the arbitrary nature of the cut-off point in assessing the discrepancy between proposed and actual or observed scores. As our results show, the number of companies fitting a specific bundle increases dramatically when we alter the value of the cut-off point

slightly. When does one speak of 'fit' or in other words how should one determine such a cut-off point is a question that needs to be addressed more thoroughly. Another idea may be to develop a more continuous measure of fit. The ideal types obviously do not "exist". In practice, organizations are more likely to have partial, adapted or hybrid forms of such theoretical HRM bundles. Our ways of measurement do introduce error which will make it harder to find effects. As our study shows, effect sizes in the relationship with outcome criteria (such as performance) are small. For financial performance one would expect effect sizes to be even smaller, given the logical distance between HRM and financial performance. Thus, it will be hard to find systematic effects even if they do exist. Delery (1998) notes that each currently used measure of HRM systems is problematic. This needs to be explored in future work. The approach we followed involved the specification of ideal types and then testing these, using measures that are similar to those in other studies. An advantage of this approach is that one is able to develop notions of alignment or fit on basis of theoretical considerations, rather than trying to make theoretical sense of bundles resulting from cluster analyses after the fact. A weakness in our approach is the assumption that it is the fit of all the practices that matters and that individual practices are given equal weights within the bundles. Delery (1998) points out that HRM practices do not necessarily have synergistic effects, but may also act as substitutes, additives or may even work against each other. However, the how and when of assigning weights to practices is not yet clear. The current study illustrates that complexity is already high when assuming equal weights. Weighting complicates the exercise further, as the number of possible scenarios within bundles increases. Strong theoretical grounds for such weighting need to be developed. For instance, the construction of theoretical bundles will then need to include statements about the predicted variation in direction between individual practices, their impact on one another as well as their overall synergistic effect.

*Conclusion.* The goal of this study was to examine the alignment of HRM practices. Four bundles were developed and supported in an expert assessment, although the results of our field study showed that only two bundles were reflected in observed HRM systems of companies. These two bundles essentially describe the ideal typical compliance and commitment model. Two more flexible models were not supported in the current study. Results also show that relatively few firms seem to have aligned systems of practices and supports the existence of more (i.e. commitment) versus less (i.e. compliance) 'favourable' HRM systems.

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