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**HRM Systems Between Control and Commitment:
Occurrence, Characteristics, and Effects on HRM Outcomes and
Firm Performance**

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Abstract

In the literature, it is often assumed that traditional, control-oriented HRM systems are increasingly being replaced by commitment-based HRM systems because the latter generally result in higher firm performance. However, an HRM system's effectiveness may depend on an organization's external and internal context, and neither control nor commitment HR systems are without disadvantages. Thus, the empirical validity of this claim is not clear ex ante. This paper analyzes the empirical diffusion and determinants of control and commitment HRM systems in Germany as well as their impact on HRM outcomes and firm performance. The findings indicate that between the two extreme forms of high-control and high-commitment HRM systems, there are two hybrid forms (long-term-oriented control system and regulated commitment system) that combine elements of both 'pure' systems. Commitment HRM systems outperform the high-control HRM system concerning many HRM outcomes and firm performance measures. However, in direct comparison, the high and the regulated commitment HRM systems do not show substantially different outcomes indicating that there is no one best way.

Keywords:

HRM systems, HRM strategy, control HRM systems, commitment HRM systems

Introduction

Human resource management (HRM) practices are usually not used in isolation. Accordingly, research in strategic HRM focuses on the analysis of bundles or systems of HRM practices and their effects on HRM outcomes and firm performance (Jiang *et al.*, 2012; Jackson *et al.*, 2014). In this context, the distinction between control and commitment HRM systems can be seen as the most prominent and still crucial distinction in many HRM systems approaches (e.g., Walton, 1985; Osterman, 1987; Begin, 1991; Arthur, 1992; 1994; Lepak and Snell, 1999; 2002; Verburg *et al.*, 2007; Toh *et al.*, 2008).

Control HRM systems are often seen as a traditional HRM approach which are supposed to be inappropriate in a modern economic environment (Walton, 1985; Kaufman, 2013; Waldman, 2013). Instead, some authors assume that high commitment HRM systems are universally valid best practices which effect competitive advantages positively (Delery and Doty, 1996; Martín-Alcázar *et al.*, 2005). However, within the contingency perspective of strategic HRM, authors have argued that an HRM system's effectiveness depends on an organization's external and internal context, including industry specifics, labor market conditions, size, life cycle, or business strategy (Jackson and Schuler, 1995; Jackson *et al.*, 2014).

Context dependency does not only refer to the HRM system per se, but also to the question which components of HRM systems are adequate in certain contexts (Boxall and Macky, 2009). For example, Baron and Kreps (1999: 195) state that “there is no single blueprint for a high-commitment HR system; organizations will pick and choose [...] high-commitment HR practices, according to their own needs, circumstances, and desires.” Beer *et al.* (1984) also indicate that organizations might use a mixture of different HRM approaches. Thus, the existence of hybrid systems is to be expected, as a mixture between control and commitment practices may be favorable in some contexts (Su and Wright, 2012).

Following these ideas, we analyze the empirical diffusion and determinants of control and commitment HRM systems in Germany as well as their impact on HRM outcomes and firm performance. Our study contributes to the literature in several ways: First, by applying latent class analysis (LCA) (e.g., Lazarsfeld and Henry, 1968), we use an advanced clustering procedure, which allows us to empirically identify distinct HRM systems on the control-commitment continuum. Since the approach is open to any possible combination of control and commitment HRM practices, it provides a more nuanced picture of existent HRM systems. Second, we demonstrate the empirical diffusion of control and commitment systems in a leading European economy, something still lacking in literature. Third, we also shed light on the determinants of different HRM system types. Thus, we address the rather neglected question of why and where different HRM systems are used (Jackson et al. 2014). Finally, we compare the outcomes of distinct HRM systems adding evidence to the yet unresolved question which combinations of HRM practices have the greater impact on HRM outcomes and firm performance (Guest, 2011).

Theoretical Background

Control and Commitment HRM Systems

Research on HRM systems has been thriving for some time (e.g., Lepak *et al.*, 2006; Guest, 2011; Alewell and Hansen, 2012; Jackson *et al.*, 2014). The basic idea in this research is that consistent or complementary bundles of HRM practices may have large effects on the achievement of HRM objectives and firms' economic performance, while changes in single HRM activities or the implementation of inconsistent HRM instruments, policies, and practices have little, no positive or even negative effects on these goals (Jiang *et al.*, 2012).

Authors from different disciplines have presented distinct typologies of HRM systems (for a comprehensive review see Kaufman, 2013). A long standing tradition can be found in indus-

trial relations research, where different forms of workforce management are mostly discussed under the heading of ‘employment systems’ (e.g., Kerr, 1954; Osterman, 1987; Begin, 1991; Arthur, 1992; 1994). Labor process literature also distinguishes different models of labor control (e.g., Edwards, 1979). More recently, the idea of HRM systems has found its way into management research (e.g., Beer *et al.*, 1984; Walton, 1985; Delery and Doty, 1996; Lepak and Snell, 1999; 2002; Verburg *et al.*, 2007; Toh *et al.*, 2008).

In an early review, Dyer and Reeves (1995: 658) pointed out that these typologies tend to “array in reasonably comparable continua from, in the authors’ terms, ‘Traditional’, ‘Control’ and ‘Mass Production’ strategies on one end to ‘Innovative’, ‘Commitment’ and ‘Flexible (or Lean) Production’ strategies on the other.” In the meantime, there has been considerable progress in the theory of HRM systems (e.g., Guest, 2011; Jackson *et al.*, 2014), and several typologies have been presented. However, the dichotomy between control HRM systems and commitment HRM systems still represents a mayor distinction in these approaches (Bae and Lawler, 2000; Lepak *et al.*, 2006; Verburg *et al.*, 2007).

Even if there is still no agreement between researchers concerning the question which specific HRM practices belong to control and commitment HRM systems, they can generally be characterized as follows: The *control* HRM system roots in Taylor’s “scientific management” and seeks to “establish order, exercise control, and achieve efficiency in the application of the work force” (Walton, 1985: 78). It aims to increase labor efficiency and to decrease direct labor costs by improving performance standards, on the one hand, and defining simple and well-defined job tasks, on the other (Arthur, 1994). High labor specialization and strong division of work with a deep hierarchy of narrow and well-defined jobs correspond to a top-down and centralized decision-making process. Skills demands are low, there is little training, and employees have no employment security (Walton, 1985). The required performance standards are accomplished by the implementation of formal rules and procedures as well as close

monitoring by supervisors, which secures employee compliance with organizational goals. Additionally, compensation practices are based on “measurable output criteria” (Arthur, 1994: 672). Control systems are generally designed to “minimize the impact of labor on the labor process. Thus, workers are more commodity-like and more replaceable” (Lepak *et al.*, 2006: 226) than in other HRM systems.

In contrast, the *commitment* HRM system facilitates the convergence of employee interests and organizational goals (Arthur, 1994). Organizations that rely on a high-commitment strategy aim “at getting more from workers by giving more to them” (Baron and Kreps, 1999: 189). Selective hiring procedures seek to find the “right”, broadly skilled employees. Based on a flexible job design, employees enjoy comparatively high involvement in managerial decisions. Long-term employment perspectives are combined with intensive training efforts, team-based production systems, job rotation, and regular quality circles. Furthermore, compensation systems are based on firm-wide, unit, and team performance measures, and include efficiency wages and superior benefits, with merit as a central pay criterion for all staff (Arthur, 1994; Baron and Kreps, 1999; Wright and Kehoe, 2008).

Does One Size Fit All?

In his seminal work, Walton (1985: 77) states that in “factory after factory there is a revolution under way in the management of work”, that is, that control HRM systems are being comprehensively superseded by high-commitment HRM systems because the latter contribute to a higher firm performance. This notion is supported by related universalistic approaches, such as high-involvement HRM systems (Lawler, 1986) or high-performance HRM systems (Huselid, 1995; Appelbaum *et al.*, 2000), and was confirmed in several studies (Combs *et al.*, 2006),

However, other authors have criticized these universalistic approaches (Baron and Kreps, 1999; Godard, 2004; Nishii *et al.*, 2008; Boxall and Macky, 2009; Guest, 2011; Atkinson and

Lucas, 2013) because they are associated with direct costs through training activities, higher wages, and employment guarantees. They may also lead to longer decision processes as well as an increased stress level.

Further criticism comes from proponents of the contingency approach of strategic HRM who assume that the effects of HRM systems depend on the specific internal and external context (Delery and Doty, 1996; Martín-Alcázar *et al.*, 2005). *Industry* represents an important external factor that influences a firm's choice between HRM systems (Jackson and Schuler, 1995; Jackson *et al.*, 2014). In manufacturing industries, production must often follow predefined processes and will thus depend on clear structures and routines implemented in the process. Therefore, it can be assumed that control-oriented HRM systems are more often used in manufacturing industries. A related question is whether daily business is influenced by strong *order fluctuations*. Firms may have differing flexibility demands (Osterman 1987) and it can be assumed that commitment HRM systems are less often used in firms with strong order fluctuations.

Firm size may also have an impact on the choice of a HRM system (Sels *et al.*, 2006; Fabi *et al.*, 2007; Bhatt and Reddy, 2011). As larger organizations receive more public attention, the pressure to implement commitment-based HRM systems may be higher, because these are interpreted as 'high road' strategies with better working conditions (Kalleberg, 2011). Further, only large organizations may be capable of bearing the cost of high-commitment HRM systems (Jackson and Schuler, 1995). Related to firm size are life cycle and owner structure. Regarding a firm's *lifecycle*, growing young firms may focus on recruitment and selection, while more mature firms are concerned with implementing internal labor markets (Jackson and Schuler, 1995). *Owner structure* might be another influencing factor. Helfen and Schuessler (2009) have shown that family-owned small businesses have a significantly lower probability

of having a works council. Thus, family ownership may be associated with stronger resistance to allow employee interference in decisions.

The role and resources of the *HRM department* should also shape the HRM system. As the commitment-based HRM strategy requires high attention to implement and maintain HRM functions, firms implementing this strategy should have some HRM professionalism. This involves a good allocation of resources for HRM and a strategic orientation by the HRM department. Given differing characteristics of jobs and employee groups, professional HRM should be related to the application of differentiated HRM for different groups of employees.

Another important factor is *employee skills and qualifications*. Lepak and Snell (1999; 2002) point out that the choice of a HRM system depends on the strategic value and uniqueness of human capital associated with different groups of employees. Accordingly, control-oriented HRM systems are more appropriate for employees with human capital that is low in strategic value and uniqueness. In contrast, if human capital is very valuable and unique, the focus should be on commitment-based HRM systems.

Finally, collective *employee representation* through unions, works councils, or other forms of institutionalized employee representation should also have an impact on the HRM system. Unions and works councils give a voice to employees and are known to influence working conditions for the better (Jackson and Schuler, 1995). We thus assume that they have a positive impact on transforming the traditional, control-oriented HRM system into a more commitment-oriented system (Su and Wright, 2012).

In short, differing HRM systems will be applied in different contexts. Furthermore, it is not only the choice of a basic system type that may be influenced by the context, but also the choice of the specific components within a basic HRM system type (Baron and Kreps, 1999), thus giving rise to *hybrid forms* as specific combinations of the basic control and commitment types of HRM systems (Beer *et al.*, 1984; Delery and Doty, 1996). This has been empirically

supported by Su and Wright (2012), who were able to show that in the Chinese context a hybrid system – including both commitment and control HRM practices – is more effective than high-commitment HRM systems.

Building on these reflections and findings, we analyze the empirical diffusion of control and commitment HRM systems and the impact of these different HRM systems on HRM outcomes and firm performance. We choose a more or less explorative approach, because our analysis has to be open to the ability of combinations of control and commitment HRM practices. However, an empirically based taxonomy can serve as a starting point for further theoretical considerations.

Data, Measures, and Methods

Data

The following analysis is based on data collected via highly structured computer-aided telephone interviews with chief executives and human resource managers of firms in Germany. The data collection was conducted in 2012 and aimed at firms with at least 20 employees in the following sectors: chemicals and pharmaceuticals, mechanical engineering, banking and insurance, and professional services (especial legal, accounting, and business consultancy activities). We have chosen this sector distribution to have the opportunity to analyze a comparatively large number of firms in the service segment as well as in classical industrial segments, and to have two sectors each within service and industrial segments. The number of randomly sampled firms in these sectors was 5,388. Contact information was drawn from the database of the German Chamber of Industry and Commerce. Of the contacted firms, 1,175 took part in the study, which left us with a satisfying response rate (21.8%). However, a first analysis of the data revealed that 76 firms did not meet the selection criteria (size and industry) or provided invalid answers. Thus, the complete usable data is available for 1,099 firms;

we thereby interviewed one person in each firm. The sample was disproportionally stratified for industry, resulting in an approximately uniform distribution (23.9% chemicals and pharmaceuticals, 24.7% mechanical engineering, 28.0% banking and insurance, and 23.3% professional services). However, based on the distribution in the German Chamber of Industry and Commerce database, we are able to weight the data, resulting in the weighted data being representative for all German firms with the aforementioned criteria. The following analyses are estimated with weighted data only.

Measurement of Variables

A broad spectrum of HRM practices was captured in the interviews. In firms that stated that they differentiated their HRM for different groups of employees, all the questions relating to HRM practices refer to the group of employees most important for the firm's economic success (as suggested by Osterman, 1994; see also Delery and Doty, 1996). If HRM did not differentiate between different groups of employees, questions on HRM practices were formulated such that they encompassed all employees. Thus, our results apply to one HRM system within a firm, even if this organization operates with more than one HRM system for differing groups of employees. If a firm operates with only one HRM system, this system encompasses all the employees. The HRM systems analyzed are comparable in that they apply to the group of employees that is most important to the firm's economic success.

For the following analyses, we included only HRM practices that were mentioned by various authors as typical practices in either control or commitment HRM systems (Table 1). As far as possible, we used items already tested in the literature (e.g., Lepak and Snell, 2002). For all items statements such as "These employees perform jobs that are well defined" were presented. Response categories ranged from 1 for *does not apply at all* to 5 for *fully applies*.

TABLE 1 ABOUT HERE

To analyze the impacts of different HRM systems on HRM-level and firm-level outcomes, we further gathered data on several HRM (e.g., personnel cost, performance level) and firm outcomes (e.g., opening up of new markets, sales growth). Again, items were measured according to the degree of agreement to different statements (1 for *does not apply at all* to 5 for *fully applies*).

When analyzing the empirical diffusion of control and commitment HRM systems and their effects, the following control variables were included: firm size, industry, firm age, family-owned (yes/no), endowment of the HRM department (such as number of employees per employee in the personnel department), strategic orientation of HRM (yes/no), differentiated HRM for different groups of employees (yes/no), share of highly skilled employees, existence of collective employee representation, binding legal commitment to or orientation towards collective bargaining agreements, and strong order fluctuations (yes/no).

Methods

To identify control and commitment HRM systems, latent class analysis (LCA) (e.g., Lazarsfeld and Henry, 1968) was used. LCA represents a classification method that seeks to identify unobserved subgroups. Compared to traditional clustering procedures (e.g., K-means), the LCA approach has several advantages (Magidson and Vermunt, 2002); these include: (1) LCA is a model-based approach in which the membership probabilities are estimated by maximum likelihood methods. (2) Several diagnostics are provided (e.g., BIC statistic) to determine the number of clusters. Thus, the choice of cluster is less arbitrary than in traditional clustering procedures. (3) LCA is more flexible regarding the scaling of the observed variables (e.g., no need for equal variances and zero-order correlations). (4) Variables with

mixed scale type (continuous, ordinal, nominal, or counts) can be integrated. (5) Covariates can be included directly into the clustering procedure.

LCA allows for the assignment of cases to different latent classes based on the highest a posteriori probability. This information can be used for further analysis. We analyzed the effect of several HRM systems on HRM outcomes and firm performance by applying ordered logit regression analysis. Ordered logit models are used to predict ordinal variables and are thus suitable for the HRM outcome and firm performance measures included in our data set. The procedure is similar to logistic regression analysis, with the difference that the depended variable has more than two categories, which can be brought into a certain order (Agresti, 2002).

Results

HRM Systems and their Characteristics

Within LCA several statistical criteria can be used to identify the appropriate number of latent classes (e.g., Collins and Lanza, 2010; Nylund *et al.*, 2007). Thereby, relative fit measures are commonly used measures to evaluate model fit. Information criteria, such as the Aiken information criterion (AIC) and the Bayesian information criteria (BIC), are particularly useful tools where models with lower AICs and BICs represent a better model fit. Unfortunately, these information criteria do not always concur in identifying the model with the best fit (Collins and Lanza, 2010). Based on an intensive simulation study, Nylund *et al.* (2007) suggested the BIC to identify the right number of clusters. However, it is also known that the BIC criteria may be too conservative and the AIC too liberal in deciding the right number of classes (McLachlan and Peel, 2000).

In addition to the information criteria, the Lo-Mendell-Rubin test (LMRT) and the bootstrap likelihood ratio test (BLRT) can also be used to assess relative model fit (Collins and Lanza, 2010; Nylund *et al.*, 2007). Both tests provide a p value in order to decide whether a k class

solution represents the data better than a $k-1$ class solution, whereas the BLRT performs better in identifying the correct number of latent classes (Nylund *et al.*, 2007). Besides these statistical criteria, decisions about model fit and model selection should also rely on parsimony (i.e., simpler models are preferred to more complex models) as well as model interpretability (Collins and Lanza, 2010).

Table 2 presents a summary of the statistics from the LCA. Unfortunately, the BIC and AIC results point to different numbers of classes. The BIC points toward a three-cluster solution, whereas the AIC suggests a five-cluster solution. As the information criteria do not yield an unequivocal solution, parsimony and model interpretability become necessary selection criteria. Thereby, we decided to use the four-cluster solution because it provides an additional interpretable cluster compared to the three-cluster solution. At the same time, it is more parsimonious than the five-cluster solution in which no interpretable additional cluster is represented. This decision is supported by the fact that the BLRT provides a highly significant result, indicating that the four-class solution better fits the data than the three-class solution.

To analyze the robustness and validity of our cluster solution, we conducted several robustness checks. A common procedure for cluster analysis is to split the sample along different criteria (e.g., Hair *et al.*, 2010). Therefore, we used firm size levels (20 to 99, ≥ 100 employees) as well as the question if firms differentiated their HRM for different groups of employees, and repeated the analysis. In every case, the analyses revealed very similar cluster profiles, which confirms the validity of our cluster solution. The cluster solution's validity is further supported by its predictive validity, because the different clusters are distinctively related to HRM outcomes and firm performance (see below).

TABLE 2 ABOUT HERE

Figure 1 shows the profile data of the four-cluster solution. The profile data contain the probability that a firm in a particular cluster is characterized by a certain HRM practice. In addition, Table 3 presents the profile data regarding different firm characteristics. Based on this information, the four clusters can be characterized as follows:

Cluster 1: High-control system

Within this cluster, we find the lowest employee discretion and also rather low communication and trust between management and employees. Neither training activities nor long-term perspectives are provided within the firm. Thus, the first cluster comes closest to the pure control system as described in the literature. However, this HRM system is not necessarily only used for well-defined jobs that are governed by clear rules and procedures. Concerning firm characteristics, firms belonging to this cluster can be found especially in small and medium-sized firms in mechanical engineering, which are often family-owned. Qualification levels in these firms are fairly low. The control system is used in firms with a comparatively low allocation of human resources to the HRM department, with no strategic role and no differentiated HRM for different groups of employees. The first cluster is also characterized by relatively high order fluctuations.

FIGURE 1 ABOUT HERE

Cluster 2: Long-term-oriented control system

The second cluster resembles the first in terms of employee discretion, communication, and trust. But in contrast to the first cluster, employees are continuously trained and have internal career perspectives as well as relatively long-term employment perspectives. Jobs are rather well defined and governed by clear rules and procedures. We have labeled this cluster *long-term-oriented control system*. This HRM system is often found in larger firms, especially

those in banking and insurance. The firms in this cluster are also older and mostly not family-owned. Compared to firms in the high-control system, these firms have a slightly higher percentage of highly skilled employees.

Cluster 3: High-commitment system

The third cluster can be characterized as a high commitment HRM system as described in the literature. Work includes a great variety of tasks and is not governed by rules and procedures. There is an open communication and intense exchange of information between management and employees. Employees can implement changes in the way they perform their jobs and are empowered to make decisions. Accordingly, there is a high level of trust between employees and employer. Employment is fairly long-term-oriented, involving continuous training activities, internal career perspectives, and employment security. Work is often performed in teams. However, incentive components are nonetheless based on individual criteria. The commitment system is more often used in small professional service firms, which are mostly quite young. These firms have a high share of skilled employees. HRM within these firms is strategically oriented, and different groups of employees are treated differently. Legal forms of employee participation are used comparatively less frequently.

Cluster 4: Regulated commitment system

The profile of the fourth cluster is similar to the profile of the third: Employees work in teams, and communication is open and intensive. Relationships are built on trust and employment, which is long-term oriented. However, there are also some differences between the two clusters because, within the forth cluster, employee discretion is much lower. And, more remarkable, jobs are well defined and mostly governed by clear rules and procedures. Therefore, we have labeled the fourth cluster a *regulated commitment system*. Another difference is that even if employment is long-term-oriented, there are comparatively fewer training activities. The regulated commitment system can be found in smaller firms with low endowment of

the HRM department, especially in chemicals/pharmaceutics and mechanical engineering. This HRM system tends to be used for less qualified employees.

TABLE 3 ABOUT HERE

Outcomes of Different HRM Systems

As shown in the last section, the four HRM system types can be linked to different firm characteristics. Because this hints at different internal and external contexts, one may expect that firms have chosen their HRM systems because it is more effective in their specific context. To shed more light on this assumption, several regression analyses were conducted to determine the effect of the different HRM systems on HRM outcomes and firm performance. To enable a detailed comparison between the outcomes of different HRM systems, regression analyses were repeated using different reference categories. Thus, each of the identified HRM systems can be compared to the three other systems.

TABLE 4 ABOUT HERE

Table 4 contains the results for HRM outcomes. The choice of the HRM system has no effect on personnel costs. However, affiliation to a cluster has strong effects for other HRM outcomes: the long-term oriented control systems performs better than the high-control systems in regard to the endowment with qualified personnel, up-to-date knowledge, performance level, cost and quality orientation of employees, motivation, job satisfaction, and commitment. Except for costs, both commitment HRM systems outperform the high-control system for all integrated HRM outcomes. The same applies for the comparison between the high-control system and the long-term oriented control system. However, the differences between the regu-

lated commitment system and the long-term oriented control system are less pronounced. The comparison between the two commitment HRM systems shows that the high-commitment system only performs better in terms of motivation, job satisfaction and commitment. For all other HRM outcomes, there are no significant differences between the high-commitment and the regulated commitment system.

The effects on firm outcomes are depicted in Table 5. The long-term oriented control system performs slightly better than the high-control system in terms of sales growth, productivity, quality of products, brand strength, return on equity, and business development. Again, the commitment HRM systems outperform the high-control system for most of the variables analyzed. The high-commitment system mostly performs better compared to the long-term-oriented control system. However, there is one negative effect of the high-commitment systems that concerns realization of low prices in relation to competitors. Again, the differences between the regulated commitment system and the long-term oriented control system are less pronounced but the regulated commitment system still outperforms the long-term oriented control system. The comparison between the two commitment HRM systems shows no significant differences.

TABLE 5 ABOUT HERE

Discussion

By empirically identifying the high-control and the high-commitment system, our analysis confirms the basic distinction made in many HRM systems approaches. The high-control oriented system is characterized by the lowest employee discretion, low qualifications and short term orientation – practices which have earlier been associated with the control (Walton, 1985; Arthur, 1992; 1994), secondary (Osterman, 1987), simple (Begin, 1991), market (Delery and Doty, 1996; Verburg *et al.*, 2007), compliance (Lepak and Snell, 1999; 2002) or cost minimizers systems (Toh *et al.*, 2008). In contrast, the high-commitment system refers to tasks variety, absence of strict rules, high qualifications and long term perspectives which corresponds to the commitment (Walton, 1985; Arthur, 1992; 1994; Lepak and Snell, 1999; 2002), salaried (Osterman, 1987), adhocracy (Begin, 1991), professional (Verburg *et al.*, 2007) and commitment maximizers systems (Toh *et al.*, 2008).

In addition, we have found that there are two hybrid systems which combine elements from both the control and commitment systems. The first hybrid system is labeled the *long-term-oriented control system*, indicating that this system is basically control-oriented, but aims at achieving long-term employment relationships with continuous training and internal career perspectives, too. Quite similar systems have been described by Osterman (1987) as ‘industrial model’ and Begin (1991) as ‘machine bureaucracy’, which are control orientated but do not necessarily exclude long-term employment perspectives (even if these are not guaranteed). In contrast to these systems, training activities are of high importance within the long-term oriented control systems, indicating that firms that apply these rather traditional systems may nevertheless feel a strong need to keep their employees’ knowledge up to date.

The second hybrid system is labeled a *regulated commitment system*. It combines key elements of commitment HRM systems such as teamwork, open and intense communication, and high trust, with control elements such as low employee discretion, well-defined jobs, and high

influence of rules and procedures. It thus points to potential limits of the commitment HRM strategy: even if high trust employers are willing to hand over responsibility to employees there may be natural constraints implemented in the work process itself. So far, this constellation has not been discussed in existent HRM systems approaches.

By identifying these two hybrid HRM systems, our analyses show that the dichotomy between control and commitment HRM systems previously debated in the literature (e.g., Walton, 1985, Arthur, 1992; 1994) is too narrowly defined. This is not trivial, given the fact, that most studies in strategic HRM emphasize high-commitment, high-involvement or high-performance HRM systems (Jackson *et al.*, 2014). The notion of these systems always implies, explicitly or implicitly, its extreme counterparts, but neglects possible distinct combinations along the control-commitment continuum. Herewith, our results also provide further reasons for the critique of common measurement approaches (for a detailed critique see, e.g., Jiang *et al.*, 2012): additive scales, indices or factor solutions assume that all practices load on a single factor respectively correlate with each other. In contrast, our results show that there are specific combinations of practices along the control-commitment continuum.

Our results show similarities with previous HRM-systems approaches. However, the great variety of conceptual and empirical approaches (Kaufman, 2013) renders it difficult to compare our findings with all existent typologies. With regard to workforce management we did not look at how production can be organized (e.g., make-or-buy), or how labor markets or organizations are structured (e.g., centralized, decentralized, bureaucratic), though these are elements in some employment systems approaches (e.g., Kerr, 1954; Beer *et al.*, 1984; Begin, 1991; Verburg *et al.*, 2007). Furthermore, we do not distinguish *ex ante* between different groups of employees. Thus, instead of asking how different groups (e.g., professionals) are managed – as done by Lepak and Snell (1999; 2002) and implicitly also by Osterman (1987) – we assumed that a specific combination of HRM practices is applicable for different groups

of employees. Finally, different authors have used different HRM practices to characterize HRM systems. For example, compared to our approach, Toh et al. (2008) focused more on recruitment, training and benefit practices and thus identified different HRM systems (contingent motivators, competitive motivators and resource makers).

Our findings further show that the ‘revolution’ described by Walton (1985) – assuming it is indeed underway – has not yet been completed in Germany: the two control HRM systems together represent 61% of the firms analyzed and thus a majority of all firms. This seems surprising, especially for Germany. Within the comparative capitalism literature (Hall and Soskice, 2001), Germany is often seen as the role model for coordinated market economies, which are characterized by a high influence of employee representatives, a high level of regulation and employment protection, fostering the expectation of comparatively good work and employment conditions and a high share of commitment-oriented HRM systems. But apparently, this is not the case in our findings.

This is even more surprising as our findings indicate that commitment-oriented HRM systems generally perform better than control-oriented HRM systems. The – given Walton’s (1985) expectations – low rate of commitment HRM systems can thus *not* be explained by performance arguments for specific contexts. Our results therefore *contradict* the potential explanation that HRM systems’ effectiveness is context specific, and rather *support* universalistic approaches which point to the general and universalistic positive influence of specific best practices (Delery and Doty, 1996). Explanations for the relatively low share of firms with commitment HRM systems must therefore be sought elsewhere. Baron and Kreps (1999) state that a central obstacle to the implementation of commitment HRM systems might be the costs connected with these systems (e.g. training, wages, and employment security). However, our findings do not support the claim that personnel costs are necessarily higher in commitment HRM systems. Alternative explanations may be found in organizational constraints which

might hinder the implementation of commitment HRM systems. Firms that depend on predefined processes and structures may not be able to apply commitment-oriented HRM systems. Another important factor is the skill and qualification structure: a prerequisite for responsibility and independent work is that employees have the necessary skills and qualifications (Jackson and Schuler, 1995; Jackson *et al.*, 2014). In this regard, we find that high-control systems are more frequently used in manufacturing industries and for employees with rather low qualification.

Other plausible causes for the comparatively low diffusion of commitment HRM systems might be the resistance by senior management, employees or their representatives. Commitment-based HRM systems require that the management is willing to give up some of its power and influence, which might not always be the case (Walton, 1985). Employees may be critical with regard to high-commitment systems, because more responsibility for individual employees may increase workload and stress (Godard, 2004). Employee representatives might hinder the implementation of pure commitment systems, because stronger individual voice may decrease the power bases of employee representations (Baron and Kreps, 1999). Again, our findings provide some evidence regarding these assumptions. For example, the high percentage of family-owned firms using control HRM system supports the notion of management resistance because especially owners may want to retain their prerogatives. Control systems are more likely in firms with works councils and a certain degree of affiliation to collective bargaining agreements, supporting the notion of a negative influence of employee representation on high-commitment HRM systems. But although there is some initial evidence, with our data we cannot thoroughly disentangle the reasons for not implementing commitment HRM systems.

Finally, the detailed comparison of the outcomes of all four HRM systems reveals that the two commitment-oriented systems slightly differ in their outcomes. High-commitment systems

only perform better in terms of motivation, satisfaction and commitment, but we found no differences for firm performance. Thus, different combinations of HRM practices possibly lead to similar outcomes – a result contradicting the widespread assumption that there is only one best way of HRM. Furthermore, it highlights again that common measurement approaches relying on additive scales, indices or factor solutions might be misleading as they focus on a continuum instead of distinct combinations of HRM practices.

Our results and conclusions are derived under certain limitations. First, we have used a cross-sectional instead of a longitudinal study design. Thus, the stated effects cannot be traced back to causal relationships. Future studies should, therefore, use longitudinal data to study these connections in greater detail. Second, our performance measures were perceptual measures. Several researchers have been able to show that there are strong statistic relationships between perceptual and hard performance measures (e.g., Delaney and Huselid, 1996; Bae and Lawler, 2000; Su and Wright, 2012). Nevertheless, future studies should also integrate objective measures and should confront them with subjective ones. Additionally, we gathered answers from a single management respondent. The usual caveats apply, as these subjective, single-person, management-sided performance measures could be biased. Third, we have only analyzed the German case and did not scrutinize the international and comparative perspective on HRM systems in the context of differing institutional contexts. Future research may thus explore whether the hybrid systems and the performance effects we have found for Germany will appear in other countries. Fourth, we only asked about the presence of HRM practices, but have no information about the degree of implementation of these practices in any single firm. This might bias our results.

Conclusion

With this paper, we contribute to the literature on HRM systems by analyzing the empirical diffusion of two ideal types of HRM systems, namely the high-control HRM system, on the one hand, and the high-commitment HRM system, on the other. Our results extend previous studies through the identification of two hybrid systems between these ideal types, the long-term-oriented control system and the regulated commitment system. By integrating a broad set of external internal context variables we shed further light on the antecedences of different HRM systems. Analyzing the impact of the four identified HRM systems on HRM outcomes and firm performance, we found that the commitment-oriented HRM systems outperform the high-control oriented system in most of the dimensions included. Therefore, our findings support the idea of specific HRM practices enhancing firm performance in different contexts. However, in comparison, the two commitment systems identified did not show significant differences regarding most of the HRM performance outcomes. As far as firm performance measures are concerned, there were no significant differences at all. This indicates that there is not only one best way for managing human resources.

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Table 1: Measures for Control and Commitment HRM Practices

		Walton (1985)		Arthur (1992; 1994)		Baron and Kreps (1999)	Lepak and Snell (1999; 2002)		Xiao and Björkmann (2006)
Label		Control	Commitment	Control	Commitment	HC HRM	Compliance	Commitment	HCWS
Job design	Well-defined jobs	✓		✓			✓		
	Wide variety of tasks		✓		✓	✓	rc	✓	
	Work in semi-autonomous workgroups		✓		✓	✓			✓
Training	Continuous training activities		✓	rc	✓	✓		✓	✓
Participation	Open communication	rc	✓	rc	✓	✓			✓
	Intensive exchange of information	rc	✓			✓			✓
	Employees perform jobs that allow them to routinely make changes in the way they perform their jobs		✓	rc		✓		✓	
Monitoring	Employees perform jobs that empower them to make decisions		✓	rc	✓	✓		✓	✓
	Work is governed by clear rules and procedures	✓		✓					
	High trust relationships		✓			✓			✓
Promotion	Promotion from within							✓	✓
Compensation	Extensive benefits package		✓	rc	✓	✓		✓	✓
	Individual incentive component	✓		✓			✓		
	Group-based incentive component		✓			✓			
Employment security	Long-term perspectives			rc			rc		

Note: rc = reverse coded.

Table 2: Summary of LCA Statistics

	Npar	BIC(L ²)	AIC(L ²)
1-cluster	17	6,253.657	1,1248.348
2-cluster	54	5,572.205	1,0384.257
3-cluster	91	5,561.461	1,0190.873
4-cluster	128	5,637.598	1,0084.372
5-cluster	165	5,746.789	1,0010.923

Table 3: Distribution of Clusters by Firm Characteristics

	Cluster 1: High-control system	Cluster 2: Long-term-oriented control system	Cluster 3: High-commitment system	Cluster 4: Regulated commitment system	Total
Firm size					
20 to 49	38.8%	5.8%	30.0%	25.4%	100.0%
50 to 99	46.0%	17.0%	14.7%	22.3%	100.0%
100 to 499	38.5%	32.7%	15.4%	13.4%	100.0%
> 500	32.3%	36.5%	26.0%	5.2%	100.0%
Industry					
Chemicals and pharmaceuticals	37.2%	25.6%	16.5%	20.7%	100.0%
Mechanical engineering	56.2%	1.9%	15.6%	26.3%	100.0%
Banking and insurance	13.8%	66.9%	16.0%	3.3%	100.0%
Professional services	13.6%	29.9%	51.0%	5.4%	100.0%
Firm age (mean, in years)	65.5	93.7	54.1	51.0	66.5
Family-owned					
Yes	50.3%	4.3%	19.3%	26.1%	100.0%
No	30.3%	36.2%	22.3%	11.3%	100.0%
Endowment of HRM department (mean)	107.6	84.4	62.2	142.0	99.5
Strategic orientation of HRM					
Yes	32.9%	24.9%	25.2%	17.1%	100.0%
No	57.1%	11.8%	9.7%	21.5%	100.0%
Differentiated HRM					
Yes	32.5%	25.3%	27.8%	14.3%	100.0%
No	48.7%	15.9%	12.0%	23.4%	100.0%
Share of highly skilled employees (mean)	25.9%	35.4%	58.4%	12.1%	32.2%
Existence of a collective employee representation					
Works council and other forms	26.2%	41.7%	14.3%	17.9%	100.0%
Works council only	44.8%	24.8%	13.0%	17.4%	100.0%
Other forms only	32.1%	13.4%	32.1%	22.4%	100.0%
None	39.0%	14.2%	28.5%	18.2%	100.0%
Collective bargaining agreements					
Commitment to collective bargaining agreements	38.2%	30.2%	16.0%	15.6%	100.0%
Orientation towards collective bargaining agreements	52.6%	6.5%	12.4%	28.4%	100.0%
None	25.4%	21.0%	42.9%	10.7%	100.0%
Strong fluctuations in order position					
Yes	48.4%	13.2%	21.1%	17.4%	100.0%
No	31.8%	28.4%	20.6%	19.3%	100.0%
Cluster size	39.7%	21.2%	20.8%	18.3%	100.0%

Table 4: Effect of Clusters on HRM Outcomes

	In reference to Cluster 1: High-control system			In reference to Cluster 2: Long-term-oriented control system		In reference to Cluster 3: High- commitment system	R
	Cluster 2: Long-term- oriented control system	Cluster 3: High- commitment system	Cluster 4: Regulated commitment system	Cluster 3: High- commitment system	Cluster 4: Regulated commitment system	Cluster 4: Regulated commitment system	
Personnel costs are low	-0.108	-0.061	0.080	0.047	0.189	0.142	0.039
Endowment with qualified employees is high	0.769***	1.472***	1.837***	0.703**	1.069***	0.366	0.192
Employees have up-to-date knowledge	0.709**	1.198***	1.191***	0.489*	0.482	-0.007	0.204
Employees show high performance level	0.847***	1.441***	0.996***	0.595**	0.149	-0.446	0.170
Employees are highly-cost oriented	0.460*	1.207***	0.824***	0.747***	0.364	-0.382	0.082
Employees are highly quality oriented	0.811***	1.293***	1.109***	0.482*	0.299	-0.184	0.129
Employees are highly innovation oriented	-0.014	0.822***	0.645***	0.836***	0.659**	-0.177	0.148
Employees are highly motivated	0.702**	1.986***	0.958***	1.284***	0.257	-1.027***	0.185
Employees show high job satisfaction	0.676**	1.878***	1.341***	1.203***	0.665*	-0.537*	0.183
Employees show high commitment	0.510*	1.483***	0.823***	0.973***	0.313	-0.660**	0.119
Number of employees can be adjusted easily	0.260	0.386*	0.626***	0.127	0.367	0.240	0.068
Allocation of personnel is very flexible in terms of working time	0.330	0.966***	0.798***	0.636**	0.468	-0.168	0.083
Allocation of personnel is very flexible in terms of task allocation	0.369	0.745***	1.078***	0.376	0.709***	0.333	0.125

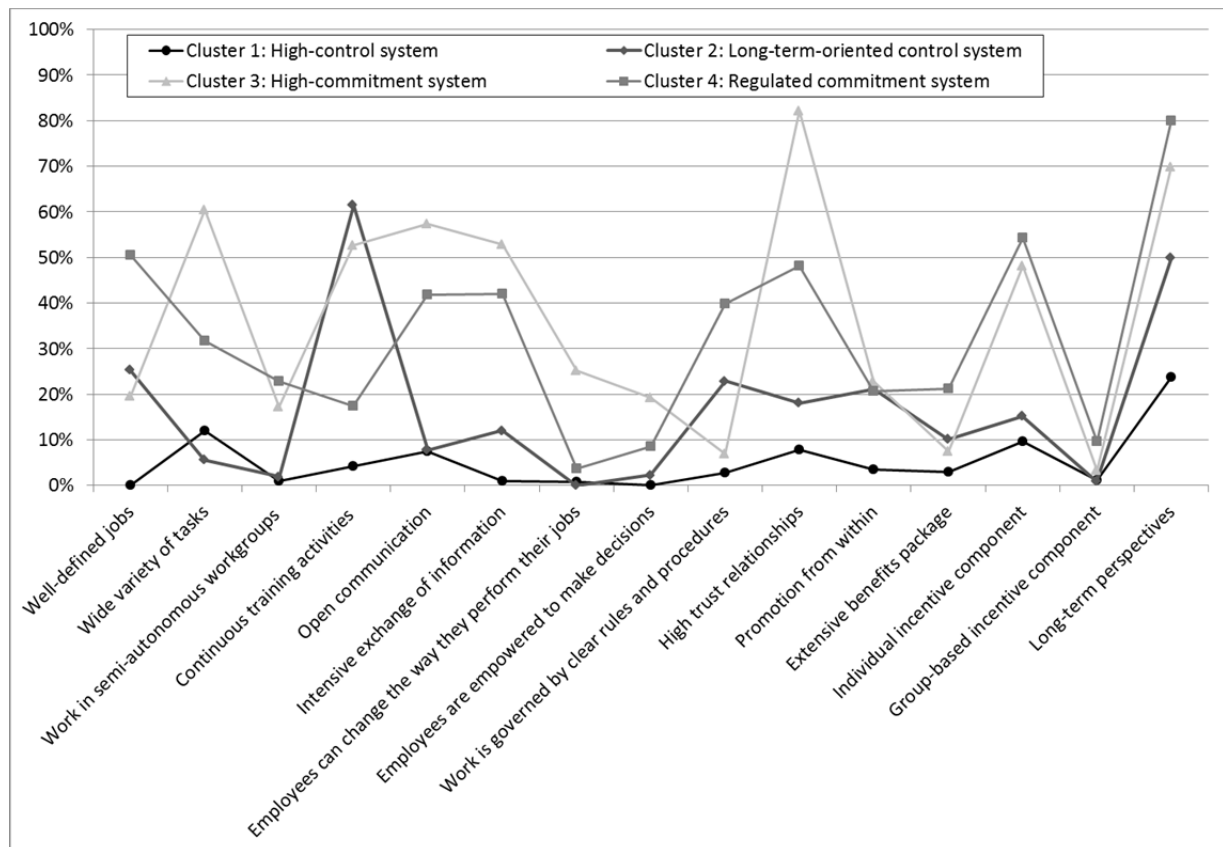
Notes: Estimates of ordinal logit regression. Control variables included. Levels of significance: * 5%; ** 1%; *** 0.1%.

Table 5: Effect of Clusters on Firm Outcomes

	In reference to Cluster 1: High-control system			In reference to Cluster 2: Long-term-oriented control system		In reference to Cluster 3: High- commitment system	R
	Cluster 2: Long-term- oriented control system	Cluster 3: High- commitment system	Cluster 4: Regulated commitment system	Cluster 3: High- commitment system	Cluster 4: Regulated commitment system	Cluster 4: Regulated commitment system	
Compared to our competitors, we realize...							
...successful opening up of new markets.	0.037	0.624***	0.918***	0.587**	0.881***	0.294	0.126
...high sales growth.	0.475*	1.058***	0.877***	0.584**	0.402	-0.182	0.126
...low costs of units of products.	0.150	0.334	0.325	0.184	0.175	-0.009	0.052
...high productivity.	0.575*	1.207***	0.785***	0.633**	0.210	-0.423	0.093
...low prices.	0.051	-0.368	0.065	-0.419*	0.014	0.433	0.055
...high quality level.	0.852***	1.534***	1.575***	0.682**	0.724**	0.042	0.178
...high innovation level.	0.032	1.014***	0.693***	0.982***	0.661**	-0.321	0.177
...strong differentiation.	0.245	0.715***	0.464**	0.470*	0.219	-0.251	0.068
...building strong brands.	0.418*	0.958***	0.551***	0.540**	0.133	-0.406	0.115
...high profit.	0.232	0.576**	0.206	0.345	-0.025	-0.370	0.065
...high return on equity.	0.621**	0.716***	0.366*	0.095	-0.255	-0.350	0.057
...positive business development.	0.624**	1.346***	1.273***	0.722***	0.648*	-0.074	0.134

Notes: Estimates of ordinal logit regression. Control variables included. Levels of significance: * 5%; ** 1%; *** 0.1%.

Figure 1: Profile Data for HRM Practices



Note: The profile data contains the share of total agreement answers within the respective cluster.