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Collective Bargaining and High-Involvement Management in Comparative Perspective: Evidence from U.S. and German Call Centers

Abstract

[Excerpt] This article examines the relationship between collective bargaining institutions and high-involvement management practices in new service workplaces, based on case study and survey evidence from U.S. and German call centers. Call centers are a particularly good setting for a comparative study of work organization. The number of call center jobs has grown rapidly, as firms in most industries have made them the central mechanism for interacting with customers.

At the same time, standardized call center technologies have diffused worldwide, leading managers to adopt similar approaches to call distribution, productivity measurement, the use of electronic monitoring to manage employee behavior, and workflow standardization. These establishments also face a common set of competitive conditions, with high cost pressures and unpredictable demand flows. They thus represent a constrained work setting in which skill levels and the bargaining power of workers and unions are typically low. Finally, because call centers are relatively new, many have either no collective bargaining institutions or, in the case of Germany, only recently established works councils—making it feasible to examine variation in these institutional arrangements.

The analysis focuses on three questions. First, do national and collective bargaining institutions influence the adoption of high-involvement management practices? I use the term “high-involvement management” to describe management practices that engender employee discretion and collaboration and that rely on trust rather than on intensive monitoring and control. Second, I ask whether national and collective bargaining institutions and high-involvement management practices are associated with lower voluntary employee turnover. Third, I consider whether high-involvement management mediates the relationship between national and collective bargaining institutions and employee turnover. That is, do these institutions affect turnover directly or only indirectly through their effects on work organization and performance monitoring? The study answers these questions through a “mixed-method” analysis, drawing on data from extensive qualitative field research as well as identical establishment-level surveys of 472 U.S. and 154 German call centers.

Keywords

United States, Germany, call center, collective bargaining, high-involvement management

Disciplines

Collective Bargaining | Human Resources Management | International and Comparative Labor Relations | International Business | Unions

Comments

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Collective Bargaining and High-Involvement Management
in Comparative Perspective:
Evidence from U.S. and German Call Centers

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The growing popularity of high-involvement management practices in the 1990s seemed to offer U.S. unions a new set of options for improving working conditions through “mutual gains” collective bargaining. However, despite initial optimism by industrial relations scholars and union representatives, most studies showed that unions enjoyed little long-term influence over work organization decisions (Godard 2004: 360–363). Comparative scholars argued that this was due to weak institutional supports for collective bargaining in the United States, where partnerships were typically on management’s terms. In contrast, research in European countries like Germany showed that unions and works councils were able to use their extensive codetermination rights and bargaining power at the industry level to negotiate agreements that increased employee participation and discretion while preserving worker control (Thelen 1991; Turner 1991).

The notion that unions in “social Europe” have systematically more influence over work restructuring decisions than U.S. unions is today widely accepted, but is supported by surprisingly little evidence outside of core manufacturing workplaces. Today, these workplaces represent a declining share of employment in industrialized countries. Newer firms in the growing service sector have lower union density and are less likely to be covered by traditional industry agreements (Dolvik and Waddington 2004). It is an open question whether national industrial relations institutions give worker representatives distinct forms of bargaining leverage over management decisions in these more poorly organized sectors.

This article examines the relationship between collective bargaining institutions and high-involvement management practices in new service workplaces, based on case study and survey evidence from U.S. and German call centers. Call centers are a particularly good setting for a comparative study of work organization. The number of call center jobs has grown rapidly, as

firms in most industries have made them the central mechanism for interacting with customers.¹ At the same time, standardized call center technologies have diffused worldwide, leading managers to adopt similar approaches to call distribution, productivity measurement, the use of electronic monitoring to manage employee behavior, and workflow standardization. These establishments also face a common set of competitive conditions, with high cost pressures and unpredictable demand flows. They thus represent a constrained work setting in which skill levels and the bargaining power of workers and unions are typically low. Finally, because call centers are relatively new, many have either no collective bargaining institutions or, in the case of Germany, only recently established works councils—making it feasible to examine variation in these institutional arrangements.

The analysis focuses on three questions. First, do national and collective bargaining institutions influence the adoption of high-involvement management practices? I use the term “high-involvement management” to describe management practices that engender employee discretion and collaboration and that rely on trust rather than on intensive monitoring and control.² Second, I ask whether national and collective bargaining institutions and high-involvement management practices are associated with lower voluntary employee turnover. Third, I consider whether high-involvement management mediates the relationship between national and collective bargaining institutions and employee turnover. That is, do these

¹ The consulting group Datamonitor estimated that call centers employed 1.2 percent of the working population in the EU on average in 2002, with an annual growth rate of over 7 percent (Datamonitor 2002). U.S. call centers were estimated to grow 20 percent annually in the 1990s, employing close to three percent of the U.S. workforce by the late 1990s (Datamonitor 1999).

² A number of terms have been used to describe management practices associated with increased employee participation and discretion, including high-performance work systems, high-commitment management, flexible production systems, and innovative work practices (Wood 1999: 391). While studies include a variety of different practices in their analyses (Becker and Gerhart 1996), they share a focus on groups of practices that invest in employee skills and discretion while providing positive incentives to use greater decision-making latitude in the interests of the firm. This study focuses on “high-involvement management practices,” following Forth and Millward (2004).

institutions affect turnover directly or only indirectly through their effects on work organization and performance monitoring? The study answers these questions through a “mixed-method” analysis, drawing on data from extensive qualitative field research as well as identical establishment-level surveys of 472 U.S. and 154 German call centers.

Prior Research

A central question in the literature on high-involvement management is why some firms adopt practices that increase employee participation and discretion, such as teamwork and job rotation, while others adopt more control-oriented approaches in which jobs are narrowly designed, monitoring is extensive, and decision making is centralized. Most past research has attributed variation in management practices to firm-level differences in task characteristics and competitive strategies. Researchers in the field of strategic human resource management argue that firms build competitive advantage on the basis of resources that are rare or difficult to imitate, and thus have an incentive to invest in these resources (Barney 1991). Employers are thus more likely to adopt high-involvement management practices for certain groups of employees, typically those viewed as “core” or strategically important to the organization (Lepak and Snell 1999); or to complement a competitive strategy focused on differentiation or service quality rather than cost leadership (Youndt et al. 1996).

An alternative perspective advanced by comparative political economy and industrial relations scholars holds that national- and workplace-level institutions have strong and persistent effects on management decisions. Institutional theorists have long argued that economic activity is embedded in complex sets of rules and resources at the level of the business community, region, or nation state, which shape both organizational goals and the attractiveness and effectiveness of different management practices (Polanyi 1944). Thus, organizations do not

respond solely to market pressures when developing a business strategy or deciding on appropriate management practices to complement this strategy. They also respond to institutional pressures from regulatory agencies, business associations, and leading organizations; and draw on institutional resources, such as available workforce skills and business relationships that promote learning across organizations.

In this article, I examine the effects of national industrial relations institutions and workplace-level collective bargaining arrangements on management practices. Industrial relations institutions constitute a formal set of bargaining arrangements within which labor and management representatives are obligated to negotiate over such decisions as pay, working time, and work reorganization. These institutions, in turn, vary between countries across two dimensions. First, the structure of collective bargaining, ranging from encompassing to more fragmented bargaining systems, affects union bargaining power and goals (Streeck 1984). Second, the strength and scope of representation rights—or rights for information, consultation, and codetermination—give unions or works councils leverage in different areas of decision making (Rogers and Streeck 1995).

Comparative researchers argued in the 1980s and 1990s that systematic differences in bargaining structures and representation rights between the United States and Germany helped to explain the more rapid adoption of high-involvement management practices in German manufacturing workplaces (e.g., Streeck 1984; e.g., Katz and Sabel 1985; Thelen 1991). Germany's institutionalized system of joint consultation contributed to stronger trust and cooperation between labor and management, reducing employee and union resistance to teamwork or flexible job descriptions while U.S. unions more often viewed these new work practices as a threat to union control over working conditions (Lorenz 1992). Turner (1991)

showed that partnerships to introduce teamwork and job rotation at U.S. automakers were much more difficult to sustain than similar partnerships in Germany, due to the weaker integration of unions into management decision-making processes and lack of strong corporatist regulation. In a comparative study of work reorganization in telecommunications, Batt and Darbshire (1997) found that the German union was able to negotiate strong agreements that encouraged management to pursue a skill-based, quality-focused approach to restructuring; while the U.S. and UK unions were largely marginalized as their companies sought to downsize and cut labor costs.

These studies focused on workplaces with strong unions and, in Germany, works councils that maintained a close working relationship with union representatives. National differences in firms' use of high-involvement management practices were attributed (in large part) to variation in industrial relations institutions across core, unionized firms. Over the past two decades, bargaining coverage has declined, and bargaining has been decentralized to the firm and establishment level in both the United States and Germany (Hassel 1999; Katz and Darbshire 2000). Bargaining arrangements are particularly diverse in new service workplaces like call centers, where bargaining institutions, where they exist, tend to be new or weak.

These trends raise two related questions. First, do persistent differences in national industrial relations institutions influence the relationship between collective agreements and management practices within the United States and Germany? According to past case study research, collective bargaining should have a more substantial effect on management decisions in Germany than in the United States. However, evidence of these differences has not been shown using comparable, representative data from union and nonunion firms. Second, to what extent do national industrial relations institutions explain variation in management practices across

countries? If industrial relations institutions are the central factor explaining cross-national variation in work reorganization decisions, we might expect few differences in the management practices adopted by U.S. and German firms that lack collective bargaining agreements.

However, other institutions that vary between the two countries, such as training and labor market institutions, may also influence outcomes—even in the absence of collective bargaining.

In the following sections, I first review theory and research on the relationship between collective bargaining and high-involvement management practices within Germany and the United States, and then discuss the possible effects of national institutions on these practices in nonunion workplaces.

Collective Bargaining and High-Involvement Management

Germany. The German “dual system” of industrial relations traditionally combined encompassing bargaining institutions and strong participation rights. Industrial unions negotiated sectoral agreements on pay and working time that were legally binding for the members of employer associations and widely used as a benchmark for nonmembers (Thelen 1991). Works councils negotiated separate agreements at the firm and establishment level, using their veto power over decisions such as hiring, firing, overtime, electronic monitoring, and performance-related pay; and their broad consultation rights over changes in how jobs are defined or work is organized (Frege 2002). Workers were also represented on companies’ supervisory boards, where they consulted with management on investment and restructuring strategies. Unions and works councils enjoyed close relationships in most firms, which allowed workers to build bargaining power through coordinated bargaining strategies.

In the 1980s, these institutions covered over 80 percent of the German workforce. However, today a shrinking number of employers and workers participate in the German “dual”

industrial relations system. Union membership reached a peak of 14 million in 1991 after unification with East Germany, but had fallen to around 8 million by 2003 (Schroeder and Wessels 2003). Local employers' associations have begun to establish nonunion affiliates that do not bind members to sectoral agreements, as smaller employers leave these associations in growing numbers. In 2000, 48 percent of West German establishments and 27 percent of East German establishments were covered by a union-negotiated collective agreement (Kohaut and Schnabel 2001),³ while works councils were present in only 16 percent of firms (Addison et al. 2002). Unions have had the most difficulty establishing industrial relations institutions in new service sector workplaces. The telecommunications industry, for example, has no sectoral agreement, and thus employers either have no formal relationship with a union or negotiate firm-level agreements with different unions.

These trends have contributed to growing variation in collective bargaining arrangements across firms. However, few studies have analyzed how the structure of these arrangements affects the management practices firms adopt. Several researchers have focused on works councils, which are typically responsible for negotiating agreements on such decisions as work organization and variable pay. Frick (2002) found that German workplaces with works councils adopted higher numbers of high-involvement practices, such as teamwork and reduction of hierarchy, and Zwick (2004) found higher rates of introduction of these practices; but in both cases this relationship did not hold up in multivariate analysis. In contrast, Addison, Schnabel, and Wagner (1997) and Frick and Sadowski (1995) found that teamwork was negatively associated with works council presence. These mixed findings suggest that works council presence alone is often not sufficient or necessary to encourage the adoption of high-involvement

³ Thirty percent of West German employees and 45 percent of East German employees were not covered by a collective agreement.

practices—works councils may hold ambiguous attitudes toward these practices; codetermination rights may not always translate into substantive influence; or employers that do not have works councils may adopt these practices to avoid collective bargaining or conform with industry “best practice.”

The presence of *both* a works council and a union-negotiated collective agreement, however, should have a stronger and more consistent effect on management practices. First, firm- or industry-level collective agreements on pay can reduce distributional conflicts between works councils and management, which might improve the willingness of both parties to cooperate in other areas (Freeman and Lazear 1995). Second, unions provide works councils with information and services that improve their bargaining power and independence from management. Thelen (1991) and Turner (1991) both showed that the German metalworkers union provided valuable support and legal advice to works councils in the auto industry, helping to avoid competition across locations and supporting joint work on work redesign. Works councils that enjoy greater independence may be more willing to use their codetermination rights to promote an alternative model of work organization. For example, Frick (2002) showed that the number of high-involvement practices was higher where management rated the works council as “antagonistic.” Union agreements should be particularly important in bolstering works council bargaining power in call centers, as union density is often low, works councils tend to be new and inexperienced, and workplaces are frequently networked to multiple locations, increasing the pressure on works councils to compete with one another for jobs absent strong coordination mechanisms (Arzbacher, Holtgrewe, and Kerst 2002).

In sum, while evidence is mixed, theory and research suggest that the structure of bargaining will influence management practices in German call centers. Centers with both a

union and a works council agreement should be more likely to adopt high-involvement management practices than centers with only a works council or no collective bargaining institutions.

United States. The United States has a fragmented and pluralist industrial relations system, with multiple unions that compete within sectors, and few remaining industry-level bargaining institutions (Katz and Darbishire 2000). Bargaining coverage is substantially lower than in Germany, although it has followed a similar trend of decline over the past decade, falling from 26 percent of the workforce in 1980 to 13 percent in 2006 (Hirsch and MacPherson 2006). Formal participation rights are also much weaker than those enjoyed by German works councils, with mandatory bargaining confined to a more narrow range of subjects, such as pay, working schedules, and vacations. As a result, U.S. unions have been more reliant on management's willingness to cooperate on joint programs to increase worker involvement (Turner 1991).

A number of U.S. unions entered into labor–management partnerships on work reorganization in the 1980s and 1990s.⁴ Research in the early 1990s found some evidence that union involvement had a positive effect on high-involvement management practices like teams and gain sharing (Eaton and Voos 1992). Partnerships on work restructuring at unionized companies such as Saturn and AT&T were found to benefit both workers and employers through providing opportunities for worker voice and strengthening trust and cooperation (Boroff and Keefe 1994; Rubinstein 2000).

By the late 1990s, however, many of these experiments had failed due to low commitment of resources and downsizing decisions taken unilaterally by management (Osterman

⁴ A large number of studies from the UK have also been carried out on this topic, many of which were based on the Workplace Employment Relations Survey (WERS). In the interest of space, I focus here on research conducted in the United States and Germany.

1999: 96–97; 158–159). Studies based on national data showed that union presence made no difference in the adoption of high-involvement practices (Gittleman, Horrigan, and Joyce 1998; Osterman 1994: 109). Research on job satisfaction also indicated that U.S. workers in unionized workplaces were less satisfied with supervision, job content, and discretion than nonunion workers (Hammer and Avgar 2005: 247). One explanation held that U.S. unions sought to preserve their influence through negotiating restrictive work rules and narrow job classifications (Hackman and Oldham 1980). Parker and Slaughter (1988), among others, argued that unions had little to gain from working with management on implementing high-involvement practices, which could marginalize their role in the workplace and contribute to work intensification. Weak labor market regulations, bargaining rights, and bargaining coverage meant that unions were systematically disadvantaged in negotiations over how new work practices were implemented. These problems may be exacerbated in call centers, where managers face strong pressures to reduce labor costs through deskilling and rationalizing work.

Thus, most evidence suggests that while U.S. unions may have mixed success in partnering with management to introduce high-involvement management practices, they tend to have little sustained effect on these practices.

The above discussion suggests the following hypothesis:

H1a: German call centers with both a union agreement and a works council will be more likely to adopt high-involvement management practices than German call centers with just a works council or no collective bargaining institutions. In contrast, there will be no difference in the adoption of high-involvement management practices between union and nonunion U.S. call centers.

National Institutions and High-Involvement Management

The adoption of high-involvement management practices can also be expected to differ between German and U.S. workplaces with no collective bargaining institutions. Firms that do not have these institutions should be influenced by other features of the regulatory and business environment that differ between the two countries. First, national training systems contribute to different levels and types of skills among the workforce, affecting the costs and potential productivity payoffs of implementing high-involvement practices. In the United States, employee skills are typically developed through some mix of individual investments, markets, and on-the-job training. In Germany, firms participate in publicly subsidized apprenticeship training programs coordinated by employers' associations and unions. This "dual" training system is often argued to give German employers more incentives to invest in transferable industry-specific skills and to design jobs more broadly to take advantage of these skills (Crouch, Finegold, and Sako 1999). For example, Finegold, Wagner, and Mason (2000) found in a comparative study of hotels that German employers adopted more job rotation, enjoyed higher overall skill levels, and had lower turnover rates compared to their counterparts in the United States—an outcome they attributed to the organized hotel apprenticeship system in Germany.

Second, employment protection legislation is stronger in Germany than in the United States. It is difficult and expensive to dismiss workers for performance reasons in Germany, and employers continue to face considerable bureaucratic obstacles and costs associated with downsizing (OECD 2004). Most U.S. employees in nonunion workplaces are considered "at will," with no formal employment contract, giving employers broad freedom to use lay-offs to adjust employment or to use the threat of dismissals to discipline and motivate employees. As a

result, German employers may have stronger incentives to invest in high-involvement management practices to complement longer-term commitments to their workforce.

Thus, German employers that are not covered by collective bargaining institutions should also have greater incentives to adopt high-involvement management practices than those in the United States. These institutional effects may be weaker in call centers than in traditional manufacturing workplaces. There is no official occupational training for call center workers in Germany. Employees in large firms may go through 3-year occupational training programs for service or clerical positions, such as bank clerk (Bank Kaufmann), but employees at newer firms tend to come from a mix of different backgrounds (Kerst and Holtgrewe 2003). In addition, call centers are often relatively new and small operations and may avoid or ignore labor market regulations, absent works councils to enforce the law (Doellgast 2006). While this suggests that national effects may be weaker in these workplaces, persistent institutional differences should have some influence on management practices, even absent unions or works councils.

H1b: German call centers with no collective bargaining institutions will be more likely to adopt high-involvement management practices than nonunion U.S. call centers.

Collective Bargaining, High-Involvement Management, and Voluntary Turnover

A second question concerns whether national and collective bargaining institutions and high-involvement management practices are associated with lower rates of voluntary employee turnover in call centers. I focus on turnover because it is a key concern for both call center managers and employees. Industry publications estimate annual turnover rates of between 22 and 50 percent worldwide (Sharp 2003), although managers in several U.S. case study firms reported rates of over 100 percent. This can substantially raise recruitment and training costs, and contribute to reduced service quality and productivity when centers lose experienced employees.

High voluntary turnover rates may also indicate that employees are dissatisfied with pay and working conditions, and in the long run can cause individuals to lose pay and miss out on advancement opportunities (Cappelli and Neumark 2004).

Voluntary turnover, or the quit rate, is thus an important measure of how collective bargaining and high-involvement management practices affect both labor costs and employee behavior. According to the “exit-voice” framework (Freeman and Medoff 1984), where structures are available for employees to exercise voice, they will be less likely to exit or quit their jobs. Collective bargaining provides “representative voice,” giving employees the means to influence management decisions and to challenge unfair treatment. High-involvement management practices provide “direct voice,” by giving employees more control over their work and a say in certain management decisions within their workgroup or workplace.

National industrial relations institutions may influence the effectiveness of collective bargaining as a form of representative voice. German works councils enjoy stronger representation rights than U.S. unions, which could improve the incentives to remain with an employer and work to improve working conditions. At the same time, bargaining coverage is substantially lower in the United States, and workers in unionized workplaces may be more reluctant to change employers due to the lower likelihood of finding another job that provides opportunities for exercising representative voice. While this suggests possible differences in the strength of collective bargaining effects on turnover, studies conducted in each country report broadly similar results for the direction of these effects. Union presence in the United States (Batt, Colvin, and Keefe 2002; Cotton and Tuttle 1986; Freeman 1980; Wilson and Peel 1991) and works council presence in Germany (Backes-Gellner, Frick, and Sadowski 1997; Dilger 2002; Frick and Sadowski 1995) have both been found to be associated with lower quits. The

German studies did not distinguish between workplaces with both works councils and union agreements and those with just a works council. However, both bargaining arrangements should provide representative voice and thus be associated with lower quit rates.

Voluntary turnover should also be lower in German call centers that lack collective bargaining institutions than in similar nonunion U.S. call centers. First, Germany's unemployment rate has been double that in the United States, at around 12 percent in 2004 compared to 6 percent in the United States. Unemployment was substantially higher in East Germany, where many call centers are located, at around 20 percent. Employees are less likely to quit their jobs when the unemployment rate is high, as their chances of finding another job are reduced. Second, Germany's stronger labor market protections further reduce the likelihood that employees will easily find job openings due to dismissals. OECD statistics show that countries with stronger employment protection legislation have lower levels of employee "churn," with less frequent job changes and longer spells of unemployment (OECD 2004). Third, the apprenticeship training system in Germany gives young people the opportunity to work for several years at an employer. Finegold et al. (2000) have argued that this serves a screening function for both employer and employee, contributing to lower turnover after the apprentice transitions to a permanent job.

Finally, high-involvement management practices should be associated with lower rates of voluntary turnover in both countries. The use of these practices increases employees' opportunity to exercise direct voice over working methods, giving them more control over their work. In addition, it increases the cost of turnover, because the firm has to invest in setting up participatory structures and then relies on employee experience and commitment to improve their effectiveness. Studies in U.S. workplaces have established that high-involvement management

practices are associated with lower quit rates across a range of industry settings (Arthur 1994; Batt 2002; Cappelli and Neumark 2004; Huselid 1995; Ichniowski et al. 1996). In addition, practices that constrain worker discretion, such as monitoring, have been found to be associated with higher quit rates in trucking (Shaw et al. 1998) and in telecommunications (Batt et al. 2002). I was unable to identify studies from Germany that tested the relationship between high-involvement management practices and turnover. However, other studies have found similar results in the UK (Guest et al. 2003) and New Zealand (Guthrie 2001). The above discussion suggests the following hypotheses:

H2a: Collective bargaining institutions will be associated with lower quit rates in U.S. and German call centers.

H2b: German call centers with no collective bargaining institutions will have lower quit rates than nonunion U.S. call centers..

H2c: High-involvement management practices will be associated with lower quit rates in U.S. and German call centers.

A further question concerns whether the differences in voluntary turnover between U.S. and German workplaces and between workplaces with different collective bargaining arrangements are due to their distinct management practices. In other words, do high-involvement management practices mediate the relationship between national and collective bargaining institutions and turnover, or do institutions and management practices have independent, additive effects?

If the relationship is fully mediated, variation in turnover across different institutional environments may be due to differences in the management practices firms adopt. Researchers have made this argument with regard to union wage effects on quit rates. Delery et al. (2000)

found that the union effect on quits disappeared when wages and benefits were included in the equation, and that participation in decision making did not significantly lower quits. Researchers who stress “exit-voice” tradeoffs, in contrast, argue that both collective bargaining and nonunion forms of participation play a direct role in keeping turnover low (Freeman and Medoff 1984). Research by Batt and colleagues (2002) supports this second view, finding that teams, pay, and unions had independent effects on quit rates in the U.S. telecommunications industry. Other national institutions, such as training and labor market institutions, may influence both management practices and turnover rates, as discussed above. This suggests that there will be some shared variance between national and collective bargaining institutions and high-involvement management practices:

H3: High-involvement management practices will partially mediate the relationship between national and collective bargaining institutions and employee quit rates

Methods

The research for this study combined extensive fieldwork and establishment level surveys of call center workplaces in the United States and Germany. Case study research involved site visits and interviews with managers, workers, union representatives, and works councilors at four matched-pair telecommunications firms and four matched-pair call center vendors. All of the telecommunications case study firms negotiated union agreements, while the vendors had a mix of collective bargaining arrangements in Germany but were nonunion in the United States. In addition, five more limited case studies were carried out in each country, involving two to three key informant interviews. In total, I conducted close to three hundred interviews during the

same time period that surveys in both countries were being administered.⁵ I briefly summarize my case study findings below, and then discuss the survey data and results.

Case Study Findings. In both the United States and Germany, managers in the case study firms were under similar pressure to reorganize call center work. New technologies had made it easier to route calls to agents with narrow specializations, closely match agent availability with call volume, and monitor employees on a range of performance metrics. Legislation passed in the late 1990s had removed the monopoly protections enjoyed by telecommunications providers in both countries, substantially increasing price-based competition; while firms had begun taking advantage of growing opportunities to outsource work to lower-cost call center vendors. At the same time, managers had strong incentives to invest in worker skills and commitment, as products became more complex and firms began to view their call centers as strategic sales channels or “profit centers.” Under these uncertain conditions, union representatives and works councilors sought to influence work reorganization decisions, promoting teamwork, increased employee discretion, and limits on the intensity and use of performance monitoring.

In the United States, the Communications Workers of America (CWA) partnered with managers at several large telecommunications firms in the 1990s to introduce self-managed teams and quality circles (Katz, Batt, and Keefe 2003). The CWA also negotiated agreements with all of its major employers that established clear limits on the level and use of electronic monitoring (Doellgast 2006). However, many of these agreements had been weakened by the early 2000s. Experiments with self-managed teams were abandoned, and opportunities for participation were severely restricted as managers sought to downsize, consolidate call centers, and implement stricter scheduling and performance management systems.

⁵ A more detailed description of the case studies and analysis of findings are reported in Doellgast (2006). The discussion below is a brief summary of these findings.

At one case study firm, the union agreed in the late 1990s to allow sales quotas and “unannounced” silent monitoring to help the company better compete for customers and combat fraud. However, the union was unable to influence how the new quotas were set. Union representatives and employees complained that targets changed constantly, were often unfair, and punished older workers. After contract restrictions on the allowed number of silent observations were lifted, the union was also not able to protect employees from progressive discipline based on those observations. The weak institutionalization of consultation meant that most decisions on work organization were made unilaterally. One manager described how partnership worked in practice:

It’s sort of a variable process. If it’s something where the [union] has no jurisdiction, for example, but as a good business partner we do want to work with them productively, we go by to make sure they’re aware of that. The communication is more a one-way informative communication—we want you to be aware that we’re doing this, and this is the effect of it. (Manager, “U.S. Telecom,”⁶ February 2005)

Managers in all of the telecommunications case studies had moved toward a more control-oriented approach to work design, as they sought to improve consistency and cut costs within the terms of their collective agreements. Where teams were in place, supervisors used them primarily to improve morale through team-based competitions and training exercises, while implementing performance management systems that tightened monitoring and decreased work discretion. Employee quits had increased across locations as managers introduced progressive discipline measures for poor performers. Employees could file grievances and were protected by some negotiated limits on monitoring, while pay remained high compared to similar nonunion call centers. At the same time, management practices appeared quite similar to those adopted in

the nonunion vendor case studies, where discretion and participation were also low, monitoring was intense, and poor performance often led to discipline or dismissal.

In Germany, the service union *Vereinte Dienstleistungsgewerkschaft* (ver.di) also promoted the use of teams and limits on monitoring in call centers in the telecommunications and vendor industries. However, the union was more successful than the CWA in influencing the design of these practices, due in large part to the strong codetermination rights works councils enjoyed over performance monitoring, adoption of new technology, and the design of performance-related pay. Works councils in the telecommunications case studies used these rights to negotiate agreements that limited which managers had access to individual performance data, to ensure that it would be used to develop rather than punish employees; and were more successful in promoting the use of teams to motivate workers and encourage learning. At several firms, agreements placed extensive and detailed restrictions on supervisors' use of "individual job control" or *Einzelplatzkontrolle*, making it difficult or impossible for managers to monitor performance at an individual level.

To improve sales and quality within these constraints, managers in one firm had reorganized employees into teams and implemented team-based monitoring, performance pay, and scheduling. The quit rate was close to zero, and employers were not able to dismiss workers for performance reasons, except in extreme cases of fraud or customer abuse. At another firm that had recently negotiated a union agreement, managers had retrained workers to handle a variety of calls, and had also begun using teams to improve sales and quality. A general manager described the close relationship with the works council:

It is a productive relationship. Codetermination laws mean that the works council has the ability to block something, which means that it's in our interest to bring the works council in the boat with us... We could spend years in court over every issue, but that is

not in our interest. We want to develop concepts that are in the interest of the employees and the employer. (Manager, "German Mobile," July 2004)

Works councilors at telecommunications and call center vendors without union negotiated collective agreements also had negotiated limits on monitoring and some job protections, but had more difficulty sustaining coordinated, independent strategies across locations. Pressures to cut costs were high, and works councils tended to be recently elected and so relatively inexperienced. At one nonunion vendor, management sought works council approval for an agreement that would require employees to work up to one hundred unpaid "training hours" a year. Managers told their works councils that they expected the majority of employees at every location to sign on to the new agreement. However, the works councils at several locations were not sure they wanted to go along with the new plan, and one actively campaigned against it with the support of a local union. Central management threatened to close locations that did not agree to the new program, and eventually all of the works councils voted to accept it.

Thus, worker representatives had very different tools to influence the management practices that call centers adopted in each country. Where unions were present in German call centers, works councils were able to use their strong codetermination rights to negotiate limits to the extent of monitoring and how it was used, as well as to encourage management to adopt high-involvement, high-discretion management practices. U.S. unions had much more limited bargaining power and influence over these practices. An analysis of survey data provides the opportunity to test whether these findings can be generalized to a larger sample of call centers in both countries.

Data. The U.S. survey was administered in mid-2003 to a stratified random sample of 472 call centers by the Survey Research Institute at Cornell University's Industrial and Labor Relations School.⁷ Forty percent of the sample was drawn from the Dun and Bradstreet listing of establishments in the telecommunications industry, which were stratified by size (10–99 employees; 100-plus employees); by SIC code (cellular, wireline, and cable); and by state location. The remaining cases came from a nationally random sample of call center managers drawn from subscriber lists of the industry publication *Call Center Magazine*. These lists included some seventy thousand names, representing a large database that covered every industry and region of the country.⁸ This sampling method was used because call centers are located in different sectors, and therefore no national database exists with employer information from these workplaces. The response rate was 62 percent, and the telephone interview averaged 40 minutes.

An identical survey was administered in Germany in 2004 to a random sample of 154 call centers by the Social Science Survey Center of the University of Duisburg/Essen.⁹ The sample was drawn from a database of 2,700 call centers that the German team compiled from lists provided by regional development agencies in eight German federal states and ver.di's Social Work Design in Call Centers (SOCA) project, as well as Internetbased membership and

⁷ The U.S. survey was supported by grants from the Alfred P. Sloan Foundation and Russell Sage Foundation, and conducted by a research team consisting of Professors Rosemary Batt and Harry Katz at Cornell University, and Professor Jeffrey Keefe at Rutgers University.

⁸ This dual method of sampling was used because the survey was carried out as part of a larger study of the telecommunications industry.

⁹ The German survey was supported by a grant from the Hans Boeckler Stiftung and conducted under the direction of Professor Karen Shire and Dr. Ursula Holtgrewe at the University of Duisburg/ Essen. The survey was translated into German by a team of bilingual researchers from the United States and Germany, which included the author. The members of the research team had extensive experience studying human resource management and work design in both countries, and were careful to translate questions in such a way that reflected parallel practices and outcomes. The design of the German survey was overseen by an advisory committee of academics and union representatives with expertise in call center workplaces.

marketing lists of call center organizations. The response rate was 51 percent, and the telephone interview averaged 45 minutes. In both surveys, interviewers asked respondents to answer questions for their establishment's "core" workforce, defined as the largest group of employees who carry out the primary work activity at that location.

The sampling methods used in each country may have resulted in oversampling of certain industry segments in each sample. The U.S. sample includes a large proportion of telecommunications call centers, while the German sample may include fewer in-house centers across industries, as these are more established and may be less likely to be involved in call center organizations or work with regional development agencies. I attempted to address this through including industry control variables in multivariate analysis, and through conducting additional analysis excluding the telecommunications call centers from the U.S. sample, which produced similar results. Due to missing data, the final samples were reduced to 591 observations for the ANOVA comparisons and models on high-involvement management (133 German and 458 U.S. call centers) and 550 for the model on quit rates (114 German and 436 U.S. call centers). Mean comparisons were conducted between the original and reduced samples, and organizational characteristics were not found to be significantly different.

Measures of High-Involvement Management Practices. I used three indices to capture different dimensions of high-involvement management: work organization, performance management, and a composite high-involvement management index. Measures were chosen based on the distinctive characteristics of call center jobs identified in past research and in my own field work. First, work organization is influenced by the individualized nature of customer contact work, as jobs involve one-on-one interactions between the call center agent and customer. Participation in teams is not focused on jointly producing a shared product more

efficiently or ergonomically, but rather learning from coworkers and improving existing systems (Batt 2004). These benefits may be lost if jobs are narrow and tightly controlled. Thus, the *high-involvement work organization* index includes four measures: the percent of employees in self-managed teams; the percent of employees in quality circles; the percent of employees with flexible job descriptions; and a discretion index measuring the level of discretion employees have over tasks and working methods.¹⁰ The discretion index was based on the average of seven 1–5 Likert scale variables on discretion over daily tasks or assignments, tools or procedures, pace or speed of work, what employees say to a customer, setting daily lunch and break schedule, handling additional requests or problems that may arise unexpectedly, and settling customer complaints without referral to a supervisor (Cronbach's alpha = 0.72).

Second, performance monitoring is pervasive in call centers and based in large part on evaluating employee behaviors and attitudes in interactions with customers. Past studies of call center workplaces have found high levels of monitoring to be associated with stress and emotional exhaustion (Deery, Iverson, and Walsh 2002; Holman, Chissick, and Totterdell 2002), suggesting that monitoring intensity may be at odds with a climate of trust and work discretion typically associated with high-involvement management approaches. The *high-discretion performance management index* includes measures of how often the calls of experienced employees are listened to by a supervisor, how often employees are given statistical information on their performance, and how often employees are given feedback on their phone technique, based on an eight-item scale ranging from rarely or never to daily; as well as the extent to which information from performance monitoring is used to support disciplinary actions, based on a 1–5

¹⁰ These measures are similar to those used by Pil and MacDuffie (1996) in their high-involvement work practices scale, which included practices indicative of the structure and organization of work.

Likert scale. Responses were reverse coded, so that high values indicate greater use of high-discretion performance management practices.

These two dimensions of management were analyzed separately for purposes of comparison: each is a distinct area of management practice and an important concern for unions and works councils, as shown in the case study results. However, when these practices are implemented together they may have additive effects on outcomes. Past research on high-involvement management has argued that the motivation and commitment effects of work design are further enhanced by incentives that provide employees with a high level of skills and compensate them for these skills (Arthur 1994). Thus, I constructed a third *high-involvement management index* that includes the seven work organization and performance management measures, as well as two additional supportive incentives: pay, measured as the core workforce's median annual base pay in U.S. dollars; and employer investment in training, measured as weeks of initial training plus the number of weeks of on-the-job training that an employee needs to become qualified.

I first computed the standardized z scores for each variable and then took the average of the items in each category to create the *work organization index* (Cronbach's alpha = 0.57), the *performance management index* (Cronbach's alpha = 0.68), and the *high-involvement management index* (Cronbach's alpha = 0.69). While these reliability measures are low, they are acceptable for an exploratory study of this nature. Factor analysis for the items in the work organization and performance management indices confirmed that they loaded onto two separate scales, further justifying separate analyses for each group of practices. In addition, separate reliability and factor analyses were carried out for the United States and Germany, with similar results in each country.

Measures of Employee Turnover. The dependent variable in the second set of regressions is the square root of the annual quit rate. Responses were based on the percent of employees who quit in the previous year. While it is more common to use the natural log of turnover, there were a large number of cases where managers reported no turnover (25 percent of observations). The square root transformation produced a normal distribution of the outcome variable without eliminating these observations.

Measures of Institutional Context. Both regression analyses include dummy variables measuring collective bargaining arrangements in each country. I constructed five variables: German establishments with a union agreement and a works council; German establishments with just a works council; German establishments without a union or a works council; U.S. establishments with a union; and U.S. establishments without a union. The omitted variable in the regression equations is nonunion U.S. centers. Five establishments in Germany with only a union agreement but no works council were omitted from the analysis.

Measures of Control Variables. I include controls for organizational characteristics that past research has found to influence both management practices and turnover rates. I controlled for establishments in the telecommunications industry, which has a unique tradition of strong unions in both countries; and establishments in the information technology and business to business sectors, as these sectors tend to involve more complex and higher value-added jobs. I also controlled for call centers that primarily served large business call centers, that were operated in-house rather than subcontracted to a third party, and that handled mostly inbound (rather than outbound) calls, as these have been found to operate under lower cost constraints and to place a higher value on customer service quality (Batt, Doellgast, and Kwon 2006). All of the above controls were constructed as dummy variables, coded 1 or 0. Finally, I included controls for the

size of the workforce, measured as the natural log of total reported call center employees, and whether the center was part of a larger organization.

Insert Table 1 about here

Results

Table 1 reports one-way ANOVA comparisons of individual variables measuring work organization, performance management, HR incentives, and turnover across firms with different collective bargaining arrangements in the United States and Germany. Reported significance levels are based on a comparison with nonunion U.S. call centers, as this is the category where management should be most free from “institutional constraints,” lacking both collective bargaining institutions and the labor market and training institutions present in Germany.

Several patterns stand out in the comparisons. First, the most consistent differences are found between countries: German call centers used more high-involvement management practices than U.S. call centers. Centers with both a union agreement and a works council in Germany were most different from nonunion U.S. centers. For example, 35 percent of workers had flexible job descriptions compared to 14 percent in the United States; and 90 percent of centers reported “infrequent” supervisor monitoring, compared to 34 percent in the United States. Pay and training were more similar between the two countries, although both were significantly lower in German centers with no collective bargaining compared to nonunion U.S. centers.

Second, centers with different collective bargaining arrangements within each country adopted more similar management practices. German centers with both a union agreement and a works council did not use more teams or report higher discretion compared to centers with no collective bargaining. However, they did adopt less intensive performance monitoring, pay substantially more, and invest more time in training. Union and nonunion U.S. call centers were also similar in their use of high-involvement practices, but this held across categories. Third, voluntary turnover rates in German and unionized U.S. call centers were lower than those in

nonunion U.S. call centers. They were also significantly lower in centers with a union and a works council compared to those with no bargaining arrangements within Germany. Average quit rates were low across centers, ranging from 2 percent in German centers with dual collective bargaining to 15 percent in nonunion U.S. centers. These rates are much lower than those commonly reported in industry publications or in the case studies, and may suggest systematic underreporting of turnover.

One explanation for these differences may be variation in organizational characteristics between samples. For example, centers without collective bargaining tended to be smaller in both countries, and in Germany were dominated by subcontractors: 90 percent of these centers were outsourced compared to 45 percent of those with only a works council and 27 percent of those with both a union and a works council. In both countries, the category of centers without bargaining institutions also included a larger proportion of outbound centers and more often focused on large business customer segments. Multivariate analysis provides a means of testing the effects of institutional variables after controlling for these organizational differences.

Table 2 reports descriptive statistics, standard deviations, and pairwise correlations.

Simple correlations show that relationships between the indicator variables and management indices for country and collective bargaining arrangements are generally in the hypothesized direction. One exception is the relationship between union presence in the United States and the work organization index, which is significant and negative. The three management indices are also negatively correlated with quit rates. Two control variables, large business segment and workforce size, are also significantly correlated with all of the outcome variables.

Insert Table 2 about here

Collective Bargaining and High-Involvement Management. The first set of regressions tests the relationship between the institutional variables measuring national and collective bargaining context and the three high-involvement management indices, using ordinary least squares (OLS) regression. Table 3 reports estimates of hierarchical regression models, including nonstandardized coefficients and standard errors. Two models are presented for each dependent variable, the first reporting the effects of organizational characteristics and the second including the four institutional variables. The dependent variable in the first two equations (1 and 2) is the work organization index; the second two equations (3 and 4) measure the performance management index; and the third two equations (5 and 6) measure the composite high-involvement management index.

Results support the hypothesized relationship between national context and management practices (Hypothesis 1b). German call centers with a union agreement and a works council, just a works council, and no collective bargaining were significantly more likely to adopt high-involvement management practices than nonunion U.S. centers—a finding that held across the three outcome measures.

The effects of different collective bargaining arrangements within the two countries are more mixed (Hypothesis 1a). In Germany, centers with a union and a works council adopted more high-involvement management practices than those with no bargaining in all three sets of equations. However, the difference between coefficients was only significant ($p < 0.01$) between the two groups for the performance management index and the composite high-involvement index. While centers with only works councils also adopted more high discretion performance management and high-involvement management practices than those without collective bargaining, these differences were not statistically significant. There were no

significant differences in work organization between centers with different bargaining arrangements.

Insert Table 3 about here

Union effects in U.S. call centers also differed across the three outcomes. No association was found between union presence and performance management or the composite high-involvement index, partially supporting Hypothesis 1a. However, union presence was negatively associated with high-involvement work organization ($p < 0.05$). Thus, U.S. managers appear to rely on a more constrained approach to work organization in unionized U.S. centers than their nonunion counterparts.

The change in the adjusted R^2 between models including organizational controls and the full models including institutional variables also varied across the three outcomes, at 0.03 for work organization, 0.12 for performance management, and 0.07 for high-involvement management. This suggests that national and collective bargaining institutions made the most substantial difference for the performance management practices firms adopt, consistent with the ANOVA findings.

Collective Bargaining, High-Involvement Management, and Voluntary Turnover. The second set of regressions (Table 4) analyzes the relationship between institutional context, management practices, and percent annual employee quits, including a test for the mediating effect of the high-involvement management indices. I used left-censored Tobit analysis because turnover is truncated at 0 (Maddala 1992). Equation 1 tests the relationship between national and collective bargaining institutions and the quit rate (Hypotheses 2a and 2b); equations 2 and 4 examine the relationship between the three high-involvement management indices and the quit rate (Hypothesis 2c); and equations 3 and 4 test whether the high-involvement management indices mediate the relationship between institutional context and the quit rate (Hypothesis 3).

Equation 1 shows that quit rates were significantly lower in German centers, both with and without collective bargaining institutions, than in nonunion U.S. centers, supporting

Hypothesis 2b. Again, within-country collective bargaining effects (Hypothesis 2a) were more varied. Turnover rates were lower in German workplaces with collective bargaining institutions than in those with no bargaining, but these differences were significant only for centers with both a union and a works council ($p < 0.05$). In the United States, union presence was more strongly associated with lower quit rates ($p < 0.001$). Equations 2 and 4 show that the work organization, performance management, and composite high-involvement indices also were associated with lower quit rates, at $p < 0.001$, providing strong support for Hypothesis 2c.¹¹ In order to test whether these results were driven by one country, separate regressions were carried out for the United States and Germany (not shown here), and the indices had similar effects on quit rates in each.

Equations 3 and 5 analyze whether the high-involvement management indices mediate the relationship between institutional context and turnover (Hypothesis 3). The OLS regressions in Table 3 established that the independent variables measuring country and collective bargaining effects significantly predicted the mediating variables: work organization, performance management, and high-involvement management. In Table 4, equations 1, 2, and 4 established the separate effects of institutional context and the human resource management indices on quits. The final equations include both sets of variables. This follows a procedure for testing mediation described by Baron and Kenny (1986). Partial mediation would occur if the size and significance of the relationship between the institutional variables and turnover were reduced. If the relationship between those variables becomes insignificant, this indicates full mediation. In addition, Sobel tests were carried out to verify that the indirect effect of the

¹¹ The full high-involvement index was analyzed separately, as it is a composite scale of variables included in the work organization and performance management indices, with the addition of the supportive HR incentives pay and training. Separate regressions were carried out for the work organization and performance management indices, with similar results, and so both are included in one equation in the final analysis.

institutional variables on turnover were significant after adding management practices (Baron and Kenny 1986).

Insert Table 4 about here

Results show that the management indices partially mediated the relationship between national institutions and the quit rate. Coefficients for all three German indicator variables decreased in the two full models, and Sobel tests indicate a significant mediating effect. This suggests that some of the variation in turnover between U.S. and German workplaces can be accounted for by systematic differences in the management practices adopted in the two countries, but that national institutions also have a direct effect on quits. However, the differences in quit rates between centers with both a union and a works council and those with no collective bargaining found in equation 1 were no longer significant when the management indices were included in the two models, suggesting full mediation. Thus, greater use of high-involvement management practices in German centers with “dual” bargaining arrangements explain their lower quit rates compared to centers with no bargaining.

In contrast, the union effect on turnover in the United States remained strongly significant after including the high-involvement management indices in both models ($p < 0.001$). The coefficient actually increased when the work organization and performance monitoring indices were added (equation 3) but did decrease somewhat when the full high-involvement index was added (equation 5). Sobel tests confirm that the mediation was not significant. This is an intuitive outcome, as U.S. unions had weaker or negative effects on these management practices. These findings also suggest that collective bargaining institutions had a more direct and persistent effect on turnover in U.S. call centers than in German call centers. Because a Tobit model was used, interpretation of the coefficients is somewhat different than in OLS regression. I decomposed the Tobit coefficients into estimates of changes in outcomes above the left censored limit and changes in the probability of observing an outcome above the left limit (McDonald and Moffitt 1980). The Tobit coefficients are 0.53 of the OLS coefficients. This means that, for

example, when the work organization index changes by one standard deviation, the quit rate decreases by 0.29 percentage points $(0.53 \times -1.014)^2$.

The results for the control variables in the two sets of regression equations are also noteworthy. Workplace size, or the number of employees, was associated with less use of high-involvement management practices and higher quit rates, and was strongly significant ($p < 0.001$) in all models. Large business centers were more likely to use high-involvement management practices, with the exception of work organization; while centers primarily handling inbound calls used less intensive performance monitoring practices and had lower quit rates. IT and business to business centers and telecommunications centers adopted more high-involvement management practices while outsourced centers adopted less, although results were inconsistent across outcomes; but industry and outsourced status had weak or no effect on quit rates.

Discussion and Conclusions

The findings of this study demonstrate that institutions at the national and workplace level can influence the adoption of high-involvement management practices. It is particularly surprising to find these effects in a peripheral service industry setting where we might expect institutions to be weak. At the same time, the analysis presented here provides a more differentiated view of institutional effects than past studies, showing variation both across workplaces with different collective bargaining arrangements and across different outcome measures.

The findings can be summarized as follows. First, German call centers were more likely to adopt high-involvement management practices and had lower quit rates than U.S. call centers, even where no collective bargaining institutions were present. The relationship between national institutions and employee quits was only partially mediated by the management practices

adopted, suggesting that both have independent effects on the turnover rate. This is consistent with the notion that stronger labor market protections and organized vocational training institutions encourage European employers to adopt more participatory and high discretion work practices—but suggests that these institutional effects may persist even in the absence of collective bargaining.

Second, within Germany, call centers with both unions and works councils were more likely to adopt high-involvement management practices than those with no collective bargaining institutions, while those with works councils and no union agreement were not more likely to adopt these practices. However, these effects did not hold for the work organization measure. High-involvement management practices, in turn, mediated the relationship between collective bargaining and quit rates. The difference in turnover between centers with both a union and works council agreement and those with no bargaining became nonsignificant after accounting for variation in management practices across these workplaces.

The limited effect of German works councils on management practices in call center workplaces that lacked union agreements is somewhat surprising, given their strong formal codetermination and consultation rights. This may be because these workplaces had newer, less experienced works councils. Works councils may also play a less independent bargaining role, absent the support of a trade union. This is consistent with the case study findings, which showed that unions provided valuable legal advice and coordinated works council negotiations across locations in centers with dual bargaining institutions. This helped to alleviate pressures for competition for jobs, as work could easily be moved to “reward” more cooperative works councilors.

The differences in collective bargaining effects on work organization and performance monitoring in Germany are particularly interesting. Work practices like teams and flexible job descriptions have received the most attention in the comparative literature, as features of the flexible employment systems that German unions and works councils were supposed to have embraced more enthusiastically than their U.S. counterparts in the 1980s and 1990s (Katz and Sabel 1985; Lorenz 1992). The analysis presented here suggests that the use of these practices in Germany was independent of workplace-level bargaining in the call centers surveyed. It may be that a higher skilled and more stable, difficult to lay off workforce provides additional resources that, in turn, justify longer-term investments in practices like self-managed teams and job rotation. In the case study firms, works councils helped to implement teamwork and redesign jobs as part of management-led efforts to improve sales and service quality. In contrast, limits on performance monitoring tended to be more contentious, requiring strong countervailing power exercised by an independent works council. The measurement and use of performance data were central issues for employees, and an area where works councils could most clearly use their codetermination rights to place strong limits on supervisors' access to individual performance data—which may help to explain stronger within-country differences for this outcome in multivariate analysis.

A third finding concerns the effects of union presence in the United States, which was associated with either less use or no difference in the use of high-involvement management practices but with significantly lower quit rates. Call centers with union agreements were less likely to adopt work organization practices like teams and flexible job descriptions, but union presence made no difference for the performance management and the composite high-involvement management scales. As in Germany, U.S. centers with collective bargaining had

lower quit rates than nonunion centers; but unlike Germany, this effect was independent of the management practices adopted. This suggests that employees in unionized call centers may not necessarily be more motivated to stay with their employer because they have higher discretion in their job, but rather for other positive benefits the union provides, such as allowing workers to exercise “voice” through the grievance process, improving pay, and policing arbitrary or unfair actions by supervisors.

These findings are broadly consistent with past research on union effects in the United States and with the case study findings. Union presence may be associated with a more constrained model of work organization due to the lack of bargaining rights and low trust between union and management representatives, rather than due to union opposition to practices like teams. Union representatives in the telecommunications case study firms were only able to enforce negotiated rules through grievances, contributing to an adversarial relationship where managers sought to use monitoring and discipline to “catch” poor performers. Individualization of work and increased discipline became a means of ensuring that jointly negotiated “rules” were adhered to by employees. Thus, union and works council effects on management practices in both countries were shaped by distinct national industrial relations institutions, which influenced both bargaining rights and the sources of local bargaining power.

Limitations. Several limitations in the data should be taken into account when interpreting results. First, the data is cross-sectional, and thus it is difficult to confirm the causal relationship between variables. For example, high quit rates may encourage managers to adopt management practices that minimize investments in employee skills and participation, while workers may be more likely to establish works councils or unions where working conditions are poor. The complementary findings from the case study research help to strengthen the claim that collective

bargaining influences management decisions and turnover. However, the temporal ordering of variables should still be interpreted with caution.

Second, there may be differences in the kinds of call centers located in the United States and Germany that this survey was unable to capture. U.S. companies are able to offshore call center work to other English-speaking countries like India, the Philippines, and Canada. As this practice becomes more popular, it may be that the jobs remaining in the United States are higher skilled or more complex. While some German companies are beginning to set up call center operations in central European countries like Poland or the Czech Republic, this has not occurred on the scale seen in the United States. However, again, this would suggest that the proportion of call centers competing on cost in Germany would be larger and thus that fewer employers would choose to adopt more expensive, high-involvement practices. Findings that the opposite is the case may strengthen the argument that national institutions help to explain distinct strategic choices.

Third, the indices provide an imperfect measure of the actual level of employee involvement, as they do not capture variation in how teams were used and what higher levels of discretion meant in practice across workplaces. The case studies presented in this article suggest that practices like self-managed and offline teams can have quite different meanings in different organizations and national settings. Future studies involving employee surveys and further case study analysis may provide a better measure of how these practices are implemented and the synergies between them in distinct institutional contexts.

Conclusions. The findings from this study contribute to the literature on high-involvement management as well as to comparative research traditions in industrial relations and political economy. Most basically, they demonstrate that variation in management practices may be

affected by factors outside of the boundaries of the firm. National industrial relations and labor market institutions have been peripheral to most research on human resource management and to studies of union effects on management practices. The analysis presented here suggests that these institutions can shape the constraints and resources that managers encounter as they seek to improve employee performance while controlling labor costs.

The insight that “national institutions matter” should be less surprising to comparative researchers, who have long argued that institutional differences between the United States and Germany help to explain variation in management practices across the two countries. This study makes two contributions to this literature. First, it demonstrates that cross-national variation in outcomes can also occur in service workplaces, which are often more weakly embedded in national institutions than manufacturing establishments. Scholars have advanced different explanations for why managers in “social Europe” invest more in worker skills and participation than their counterparts in “liberal market” countries like the United States or UK, such as the distinct competitive advantages that complementary institutions provide firms in world markets (Hall and Soskice 2001), variation in national industrial relations institutions (Katz and Darbishire 2000), or different education and training systems (Crouch et al. 1999). Call centers do not fit neatly into these categories: the market served is largely domestic, cost-cutting pressures are high, industrial relations institutions are weak and fragmented, and training is primarily on the job. These would seem to create ideal conditions for cross-national “convergence” on a similar management model, with differences driven primarily by organizational or task characteristics. The finding that German managers are more likely to adopt high-involvement practices in this work setting suggests that national institutions exhibit some

path dependence, providing incentives for managers to take a more “high road” approach in countries with stronger labor market and industrial relations institutions.

Second, the findings provide unique evidence that collective bargaining has different effects on management practices *within* the United States and Germany. Industrial relations researchers have long argued that encompassing sectoral collective bargaining institutions and strong codetermination rights exercised by firm- and establishment-level works councils contributed to the more rapid adoption and persistence of high-involvement management practices in Germany compared to the United States (e.g. Katz and Sabel 1985). Thelen (1991) and Turner (1991) argued that these “dual” bargaining institutions played a central role in union stability and bargaining power in Germany, while helping to prevent works councils from becoming company unions. However, these arguments were based on evidence from matched-pair case studies of large, unionized employers, with few studies examining the effects of different bargaining structures within Germany. Understanding these distinct effects is particularly important as within-country bargaining arrangements become more varied.

Consistent with the predictions of this past research, the present study found that collective bargaining institutions in Germany that combined union and works council agreements were positively associated with high-involvement practices, while union presence in the United States either had no effect or was negatively associated with the same practices. At the same time, works council effects alone were weak within Germany— suggesting that codetermination rights on their own are insufficient to ensure the exercise of “strong” representative voice in work reorganization decisions. The findings here may not generalize as easily to sectors with a longer tradition of bargaining, where works councils are stronger and more entrenched.

However, they should be indicative of conditions in new firms and workplaces, where there has been concern over the limited independence of works councils.

The implications for unions are mixed. Unions had positive effects on outcomes like pay, training, and turnover in both countries, but they were not consistently associated with higher levels of discretion or participation. Moreover, they represented a small proportion of the call center workforce: in both Germany and the United States, a minority of establishments surveyed negotiated union agreements, while a majority of the German call center workforce covered by the survey was employed in centers with only works council agreements. While unions help to lower turnover rates, this is just one cost. Firms may be willing to invest in high-involvement management practices for higher valued customer segments, but there are growing pressures for segmentation and outsourcing of these jobs in both countries. In 2007, Deutsche Telekom moved over forty-five thousand call center employees into a new subsidiary; and renegotiated their collective agreements on pay and working time. This is particularly noteworthy as it occurred at one of Germany's largest employers with a tradition of strong unions and works councils. While this study demonstrates that strong forms of collective representation can encourage a high-involvement approach to call center management, shrinking bargaining coverage and intensifying competition may increase both opportunities and pressures across institutional settings to adopt practices associated with declining skill, discretion, and overall job quality.

References

- Addison, John T., Claus Schnabel, and Joachim Wagner. 1997. "On the Determinants of Mandatory Works Councils in Germany." *Industrial Relations* 36(4):419–45.
- , Lutz Bellmann, Claus Schnabel, and Joachim Wagner. 2002. "German Works Councils Old and New: Incidence, Coverage and Determinants." *Forschungsinstitut zur Zukunft der Arbeit*, Discussion Paper No. 495.
- Arthur, Jeffrey. 1994. "Effects of Human Resource Systems on Manufacturing Performance and Turnover." *Academy of Management Journal* 37:670–87.
- Arzbacher, Sandra, Ursula Holtgrewe, and Christian Kerst. 2002. "Call Centres: Constructing Flexibility." In *Re-Organising Service Work: Call Centres in Germany and Britain*, edited by U. Holtgrewe, C. Kerst, and K. Shire, pp. 19–41.
- Aldershot, UK: Ashgate. Backes-Gellner, Uschi, Bernd Frick, and Dieter Sadowski. 1997. "Codetermination and Personnel Policies of German Firms: The Influence of Works Councils on Turnover and Further Training." *International Journal of Human Resource Management* 8(3):328–47.
- Barney, Jay B. 1991. "Firm Resources and Sustained Competitive Advantage." *Journal of Management* 17(1):99–120.
- Baron, Reuben M., and David A. Kenny. 1986. "The Moderator-Mediator Variable Distinction in Social Psychological Research." *Journal of Personality and Social Psychology* 51(6):1173–82.
- Batt, Rosemary. 2002. "Managing Customer Services: Human Resource Practices, Quit Rates, and Sales Growth." *Academy of Management Journal* 45(3):587–97.

- . 2004. “Who Benefits from Teams? Comparing Workers, Supervisors, and Managers.” *Industrial Relations* 43(1):183–212.
- , and Owen Darbshire. 1997. “Institutional Determinants of Deregulation and Restructuring in Telecommunications: Britain, Germany and the United States Compared.” *International Contributions to Labour Studies* 7:59–79.
- , Alex Colvin, and Jeffrey Keefe. 2002. “Employee Voice, Human Resource Practices, and Quit Rates: Evidence from the Telecommunications Industry.” *Industrial and Labor Relations Review* 55(4):573–93.
- , Virginia Doellgast, and Hyunji Kwon. 2006. “Service Management and Employment Systems in U.S. and Indian Call Centers.” In *Offshoring White-Collar Work*, edited by Susan M. Collins and Lael Brainard. Washington, DC: Brookings Institution Press.
- Becker, Brian, and Barry Gerhart. 1996. “The Impact of Human Resource Management on Organizational Performance: Progress and Prospects.” *The Academy of Management Journal* 39(4):779–801.
- Boroff, Karen, and Jeffrey Keefe. 1994. “Telecommunications Labor–Management Relations: One Decade after the AT&T Divestiture.” In *Contemporary Collective Bargaining in the Private Sector*, edited by Paula Voos, pp. 303–71. Madison, WI: Industrial Relations Research Association.
- Cappelli, Peter, and David Neumark. 2004. “External Churning and Internal Flexibility: Evidence on the Functional Flexibility and Core-Periphery Hypotheses.” *Industrial Relations* 43(1):148–82.
- Cotton, John L., and Jeffrey M. Tuttle. 1986. “Employee Turnover: A Meta-Analysis and Review with Implications for Research.” *Academy of Management Review* 11(1):55–70.

- Crouch, Colin, David Finegold, and Mari Sako. 1999. *Are Skills the Answer? The Political Economy of Skill Creation in Advanced Industrial Countries*. Oxford: Oxford University Press.
- Datamonitor. 1999. *Opportunities in U.S. and Canadian Call Center Markets*. New York: Datamonitor.
- . 2002. *Call Centers in EMEA to 2007*. London: Datamonitor.
- Deery, Stephen J., Roderick D. Iverson, and Janet P. Walsh. 2002. “Work Relationships in Telephone Call Centers: Understanding Emotional Exhaustion and Employee Withdrawal.” *Journal of Management Studies* 39(4):471–97.
- Delery, John E., Nina Gupta, Jason Shaw, G. Douglas Jenkins, and Margot Ganster. 2000. “Unionization, Compensation, and Voice Effects on Quits and Retention.” *Industrial Relations* 39(4):625–46.
- Dilger, Alexander. 2002. *Ökonomik Betrieblicher Mitbestimmung*. Munich: Rainer Hampp Verlag.
- Doellgast, Virginia. 2006. *Negotiating Flexibility: The Politics of Call Center Restructuring in the U.S. and Germany*. Dissertation, School of Industrial and Labor Relations, Cornell University, Ithaca, New York.
- Dolvik, Jon Erik, and Jeremy Waddington. 2004. “Organizing Marketized Services: Are Trade Unions up to the Job?” *Economic and Industrial Democracy* 25(1):9–40.
- Eaton, Adrienne E., and Paula B. Voos. 1992. “Unions and Contemporary Innovations in Work Organization, Compensation, and Employee Participation.” In *Unions and Economic Competitiveness*, edited by L. Mishel and Paula Voos, pp. 173–216. Armonk, NY: M. E. Sharpe.

- Finegold, David, Karin Wagner, and Geoff Mason. 2000. "National Skill-Creation Systems and Career Paths for Service Workers: Hotels in the United States, Germany, and the United Kingdom." *International Journal of Human Resource Management* 11(3):497–516.
- Forth, John, and Neil Millward. 2004. "High-Involvement Management and Pay in Britain." *Industrial Relations* 43(1):98–119.
- Freeman, Richard B. 1980. "The Exit-Voice Tradeoff in the Labor Market: Unionism, Job Tenure, Quits, and Separations." *Quarterly Journal of Economics* 94(3):643–73.
- , and Edward P. Lazear. 1995. An Economic Analysis of Works Councils. In *Works Councils: Consultation, Representation, and Cooperation in Industrial Relations*, edited by J. Rogers and W. Streeck, pp. 27–50. Chicago: University of Chicago Press.
- , and James L. Medoff. 1984. *What Do Unions Do?* New York: Basic Books.
- Frege, Carola M. 2002. "A Critical Assessment of the Theoretical and Empirical Research on German Works Councils." *British Journal of Industrial Relations* 40(2):221–48.
- Frick, Bernd. 2002. "High-Performance Practices und Betriebliche Mitbestimmung: Komplementär oder Substitutiv? Empirische Befunde für den deutschen Maschinenbau." *Industrielle Beziehungen* 9:79–102.
- , and Dieter Sadowski. 1995. "Works Councils, Unions, and Firm Performance." In *Institutional Frameworks and Labor Market Performance: Comparative Views on the U.S. and German Economies*, edited by F. Buttler, W. Franz, R. Schettkat and D. Soskice, pp. 46–81. London: Routledge.
- Gittleman, Maury, Michael Horrigan, and Mary Joyce. 1998. "'Flexible' Workplace Practices: Evidence from a Nationally Representative Survey." *Industrial and Labor Relations Review* 52(1 (October)):99–115.

- Godard, John. 2004. "A Critical Assessment of the High-Performance Paradigm." *British Journal of Industrial Relations* 42(2):349–78.
- Guest, David E., Jonathan Michie, Neil Conway, and Maura Sheehan. 2003. "Human Resource Management and Corporate Performance in the UK." *British Journal of Industrial Relations* 41(2):291–314.
- Guthrie, James P. 2001. "High-Involvement Work Practices, Turnover and Productivity: Evidence from New Zealand." *Academy of Management Journal* 44:180–90.
- Hackman, J. Richard, and Greg Oldham. 1980. *Work Redesign*. Reading, MA: Addison-Wesley.
- Hall, Peter A., and David Soskice, editors. 2001. *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- Hammer, Tove, and Ariel Avgar. 2005. "The Impact of Unions on Job Satisfaction, Organizational Commitment, and Turnover." *Journal of Labor Research* 26(2):241–66.
- Hassel, Anke. 1999. "The Erosion of the German System of Industrial Relations." *British Journal of Industrial Relations* 37(3):483–505.
- Hirsch, Barry, and David MacPherson. 2006. "Union Membership, Coverage, Density, and Employment among All Wage and Salary Workers, 1973–2006." Union Membership and Coverage Database from the CPS, <http://trinity.edu/bhirsch/unionstats/>, accessed March 2007.
- Holman, David, C. Chissick, and Peter Totterdell. 2002. "The Effects of Performance Monitoring on Emotional Labour and Well-Being in Call Centres." *Motivation and Emotion* 26(1):57–81.

- Huselid, Mark A. 1995. "The Impact of Human-Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance." *Academy of Management Journal* 38(3):635–72.
- Ichniowski, Casey, Thomas A. Kochan, David Levine, Craig Olson, and George Strauss. 1996. "What Works at Work: Overview and Assessment." *Industrial Relations* 35(3):299–333.
- Katz, Harry C., and Owen Darbishire. 2000. *Converging Divergences*. Ithaca: ILR Press.
- , and Charles Sabel. 1985. "Industrial Relations and Industrial Adjustment in the Car Industry." *Industrial Relations* 24(3):295–315.
- , Rosemary Batt, and Jeffrey H. Keefe. 2003. "The Revitalization of the CWA: Integrating Collective Bargaining, Political Action, and Organizing." *Industrial and Labor Relations Review* 56(4):573–89.
- Kerst, Christian, and Ursula Holtgrewe. 2003. "Interne Oder Externe Flexibilität? Call Center als Kundenorientierte Organisationen." In *Immer Anschluss unter dieser Nummer—Rationalisierte Dienstleistung und subjektivierte Arbeit in Callcentern*, edited by F. Kleemann and I. Matuschek. Berlin: Sigma.
- Kohaut, Susanne, and Claus Schnabel. 2001. "Tarifverträge—Nein Danke!? Einflussfaktoren der Tarifbindung West-und Ostdeutscher Betriebe." Friedrich-Alexander-Universitaet, Erlangen Nuernberg, Discussion Paper No. 8.
- Lepak, David P., and Scott A. Snell. 1999. "The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development." *Academy of Management Review* 24(1):31–48.
- Lorenz, Edward H. 1992. "Trust and the Flexible Firm: International Comparisons." *Industrial Relations* 31(3):455–72.

- Maddala, G. S. 1992. *Introduction to Econometrics*, 2nd ed. New York: Macmillan.
- McDonald, John F., and Robert A. Moffitt. 1980. "The Uses of Tobit Analysis." *Review of Economics and Statistics* 62:318–21.
- OECD. 2004. "Chapter 2: Employment Protection Legislation and Labour Market Performance." OECD Employment Outlook. <http://www.oecd.org/dataoecd/8/4/34846856.pdf>.
- Osterman, Paul. 1994. "How Common is Workplace Transformation and Who Adopts It?" *Industrial and Labor Relations Review* 47:173–88.
- . 1999. *Securing Prosperity*. Princeton: Princeton University Press.
- Parker, Michael, and Jane Slaughter. 1988. *Choosing Sides: Unions and the Team Concept*. Boston: South End Press.
- Pil, Frits K., and John Paul MacDuffie. 1996. "The Adoption of High-Involvement Work Practices." *Industrial Relations* 35(No. 3 (July)):423–55.
- Polanyi, Karl. 1944. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston: Beacon Press.
- Rogers, Joel, and Wolfgang Streeck (eds). 1995. *Works Councils: Consultation, Representation, and Cooperation in Industrial Relations*. Chicago: University of Chicago Press.
- Rubinstein, Saul. 2000. "The Impact of Co-Management on Quality Performance: The Case of the Saturn Corporation." *Industrial and Labor Relations Review* 53(January):197–218.
- Schroeder, Wolfgang, and Bernhard Wessels (eds). 2003. *Die Gewerkschaften in Politik und Gesellschaft der Bundesrepublik Deutschland*. Wiesbaden: Westdeutscher Verlag.
- Sharp, Duane. 2003. *Call Center Operation—Design, Operation and Maintenance*. Burlington, MA: Digital Press.

- Shaw, Jason D., John E. Delery, G. Douglas Jenkins Jr, and Nina Gupta. 1998. "An Organization-Level Analysis of Voluntary and Involuntary Turnover." *Academy of Management Journal* 41(5):511–25.
- Streeck, Wolfgang. 1984. *Industrial Relations in West Germany: A Case Study of the Car Industry*. London: Heinemann.
- Thelen, Kathleen. 1991. *Union of Parts: Labor Politics in Postwar Germany*. Ithaca: Cornell University Press.
- Turner, Lowell. 1991. *Democracy at Work: Changing World Markets and the Future of Labor Unions*. Ithaca: Cornell University Press.
- Wilson, Nicholas, and Michael J. Peel. 1991. "The Impact on Absenteeism and Quits of Profit-Sharing and Other Forms of Employee Participation." *Industrial and Labor Relations Review* 44(3):454–68.
- Wood, Stephen. 1999. "Getting the Measure of the Transformed High-Performance Organization." *British Journal of Industrial Relations* 37(3):391–417.
- Youndt, Mark A., Scott A. Snell, James W. Dean Jr, and David P. Lepak. 1996. "Human Resource Management, Manufacturing Strategy, and Firm Performance." *Academy of Management Journal* 39(4):836–66.
- Zwick, Thomas. 2004. "Employee Participation and Productivity." *Labour Economics* 11:715–40.

Table 1. ANOVA Comparison of Means

	Germany			United States	
	Union & WC	Only WC	No bargaining	Union	Nonunion
Work organization					
% workforce in self-managed teams	32.3*	15.9	33.6*	5.5	11.3
% workforce in quality circles	30.6	40.5	35.8	27.3	36.7
% workforce with flex job descriptions	34.5*	28.7*	38.3*	5.9	14.2
% high discretion ^a	60.0*	58.6	54.1*	31.0	41.6
Performance management					
% infrequent communication of performance stats ^b	74.1*	39.3	54.1	41.5	44.6
% infrequent supervisor monitoring ^b	90.0*	82.8*	70.4*	45.2	34.2
% infrequent feedback on phone technique ^b	79.3*	79.3*	50.7	34.1	44.0
% low use of performance info for discipline ^c	83.3*	67.9*	66.7*	31.0	23.2
HR incentives					
Annual pay (USD)	40,025	32,174	28,375	38,601	33,394
Weeks initial and on-the-job training	19.1	17.1	12.6*	38.7*	21.8
Turnover					
% quit	1.92*	2.91*	7.25*	5.63*	15.24
Number of call centers	30	29	74	42	416
Total call center workforce	3432	9470	4704	13,770	101,340
% of workforce (by country)	19.5	53.8	26.7	12.0	88.0

NOTE: *p* values reported if significantly different from U.S. nonunion centers, based on one-way ANOVA.

**p* < 0.05.

^aPercentage answering “high” or “complete” discretion.

^bPercentage with less than monthly communication of performance data, monitoring, and feedback.

^cPercentage answering that information from monitoring is used to support disciplinary actions “not at all” or “a little.”

Table 2. Means, Standard Deviations, and Pairwise Correlations*

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Quit rate (sqrt)	2.72	2.25															
2 Work organization index	-0.01	0.66	-0.37														
3 Performance mgmt index	-0.01	0.71	-0.37	0.32													
4 High-involvement index	-0.01	0.52	-0.46	0.77	0.78												
5 Germany/union and WC	0.05	0.22	-0.20	0.09	0.26	0.20											
6 Germany/works council	0.05	0.22	-0.14	0.06	0.14	0.09	-0.05										
7 Germany/no bargaining	0.13	0.33	-0.17	0.16	0.16	0.14	-0.09	-0.09									
8 U.S./union	0.07	0.26	-0.14	-0.13	-0.08	-0.05	-0.06	-0.06	-0.10								
9 U.S./no bargaining	0.70	0.46	0.36	-0.11	-0.27	-0.21	-0.36	-0.35	-0.58	-0.43							
12 IT/business to business	0.12	0.32	-0.03	0.09	0.03	0.03	-0.06	-0.06	0.02	-0.06	0.08						
13 Telecommunications	0.36	0.48	-0.05	0.04	0.01	0.01	-0.14	-0.07	-0.23	0.15	0.18	-0.27					
14 Large business	0.24	0.43	-0.09	0.14	0.12	0.12	-0.06	-0.03	0.16	-0.05	-0.05	0.23	-0.15				
15 Outsourced	0.26	0.44	0.03	-0.01	-0.01	-0.01	0.01	0.10	0.56	-0.37	-0.37	0.12	-0.32	0.15			
16 Inbound	0.82	0.39	-0.07	-0.10	0.05	0.05	0.09	0.07	-0.35	0.14	0.14	-0.06	0.07	-0.18	-0.29		
17 Size (ln)	4.11	1.51	0.37	-0.49	-0.39	-0.39	-0.05	0.07	-0.23	0.11	0.11	0.09	-0.11	-0.13	0.05	0.10	
18 Part of larger org	0.79	0.41	0.01	-0.10	-0.06	-0.06	0.05	0.04	-0.17	0.02	0.02	0.10	0.00	-0.08	-0.20	0.14	0.16

*Significant at $p < 0.05$ if correlation ≥ 0.08 .

Table 3. OLS Estimates for High-Involvement Management Indices

	Work organization		Performance management		High-involvement management	
	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (4)	Eq. (5)	Eq. (6)
Institutional context						
Germany: union and works council		0.306** (0.111)		0.931*** (0.118)		0.537*** (0.083)
Germany: works council		0.383*** (0.112)		0.704*** (0.119)		0.443*** (0.084)
Germany: no bargaining		0.210* (0.095)		0.494*** (0.101)		0.249*** (0.071)
U.S.: union		-0.199* (0.093)		-0.017 (0.100)		0.018 (0.070)
Organizational controls						
IT/business to business	0.143+ (0.078)	0.200** (0.078)	0.000 (0.088)	0.144+ (0.083)	0.040 (0.060)	0.122* (0.058)
Telecommunications	0.028 (0.055)	0.093 (0.056)	-0.033 (0.062)	0.101+ (0.059)	0.025 (0.042)	0.099* (0.042)
Large business customers	0.084 (0.059)	0.094 (0.058)	0.136* (0.067)	0.160** (0.062)	0.179*** (0.046)	0.193*** (0.044)
Outsourced center	-0.017 (0.061)	-0.132+ (0.071)	0.042 (0.069)	-0.192* (0.076)	-0.070 (0.048)	-0.192*** (0.053)
Inbound calls	-0.072 (0.065)	-0.075 (0.066)	0.206** (0.074)	0.196** (0.070)	0.008 (0.051)	-0.005 (0.049)
Size (ln)	-0.209*** (0.016)	-0.192*** (0.017)	-0.184*** (0.018)	-0.148*** (0.018)	-0.166*** (0.013)	-0.148*** (0.013)
Part of larger org	-0.029 (0.060)	-0.039 (0.060)	-0.002 (0.068)	-0.043 (0.064)	0.016 (0.047)	-0.010 (0.045)
Constant	0.888*** (0.104)	0.779*** (0.110)	0.543*** (0.117)	0.281** (0.117)	0.617*** (0.081)	0.483*** (0.082)
Sample size	591	591	591	591	591	591
<i>F</i>	28.45***	21.05***	16.76***	21.18***	31.83***	28.47***
<i>R</i> ²	0.25	0.29	0.17	0.29	0.28	0.35
Adjusted <i>R</i> ²	0.25	0.27	0.16	0.27	0.27	0.34

NOTE: S.E. in parentheses

+*p* < 0.10; **p* < 0.05; ***p* < 0.01; ****p* < 0.001.

Table 4. Unstandardized Tobit Estimates for voluntary Employee Turnover

	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (4)	Eq. (5)
Institutional context					
Germany: union and works council	-4.309*** (0.643)		-3.395*** (0.642)		-3.300*** (0.625)
Germany: works council	-3.086*** (0.583)		-2.463*** (0.572)		(0.625) (0.566)
Germany: no bargaining	-2.626*** (0.448)		-2.098*** (0.439)		-2.207*** (0.433)
U.S.: union	-2.208*** (0.423)		-2.414*** (0.408)		-2.168*** (0.405)
High-involvement management					
Work organization index		-1.101*** (0.203)	-1.014*** (0.192)		
Performance monitoring index		-0.965*** (0.178)	-0.574*** (0.174)		
High-involvement management index				-2.167*** (0.254)	-1.618*** (0.245)
Organizational controls					
IT/business to business	-0.815* (0.354)	0.045 (0.362)	-0.491 (0.344)	-0.027 (0.358)	-0.592+ (0.341)
Telecommunications	-0.361 (0.249)	0.024 (0.252)	-0.196 (0.241)	0.071 (0.250)	-0.201 (0.240)
Large business customers	-0.392 (0.265)	-0.081 (0.275)	-0.210 (0.257)	0.084 (0.275)	-0.068 (0.258)
Outsourced center	0.766* (0.327)	-0.346 (0.292)	0.465 (0.318)	-0.521+ (0.291)	0.396 (0.318)
Inbound calls	-0.890*** (0.297)	-0.801** (0.305)	-0.896** (0.288)	-0.897** (0.300)	-0.942*** (0.285)
Size (ln)	0.727*** (0.082)	0.464*** (0.094)	0.440*** (0.089)	0.507*** (0.090)	0.476*** (0.086)
Part of larger org	-0.098 (0.272)	-0.340 (0.282)	-0.109 (0.262)	-0.270 (0.280)	-0.066 (0.261)
Constant	1.071* (0.502)	1.395** (0.521)	2.046*** (0.503)	1.262** (0.508)	1.912*** (0.495)
Sample	550	550	550	550	550
Chi square	224.12	181.95	267.16	185.01	266.78
pr < chi square	0	0	0	0	0
pseudo R ²	0.10	0.008	0.12	0.08	0.12
Log likelihood	-1044	-1065	-1023	-1064	-1023

NOTE: S.E. in parentheses

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.