THE GLOBALIZATION OF SERVICE WORK: COMPARATIVE INSTITUTIONAL PERSPECTIVES ON CALL CENTERS

INTRODUCTION TO A SPECIAL ISSUE OF THE *INDUSTRIAL & LABOR RELATIONS REVIEW*

ROSEMARY BATT, DAVID HOLMAN, and URSULA HOLTGREWE*

This introduction to the special issue on the globalization of service work provides an overview of the call center sector and its development in coordinated, liberal market, and emerging market economies. The introduction's authors situate this research in literature on the comparative political economy and industrial relations. Drawing on qualitative research and a unique survey of 2,500 establishments in 17 countries conducted in 2003–2006, they discuss the extent of convergence and divergence in management practices and employment relations. They also describe the research methodology for the overall research project, highlight its major findings, and summarize the contributions of the thematic papers covering several topics: unions' role in shaping the quality of jobs; the factors that influence wage levels and wage inequality; the uses of contingent employment and their outcomes; the relationships among strategic human resource management, work design, and organizational outcomes; and the relationships among technology, selection, and training.

The globalization of service work has drawn the attention of both researchers and the media in recent years. While international trade in services is not new, it intensified in the late 1990s in the wake of deregulation of service industries, market liberalization spurred by the General Agreement on Trade in Services, and advances in digitization. This process of globalization has been contentious: it has offered opportunities for economic growth for some while putting downward pressure on wages and employment levels for a growing swath of skilled and semi-skilled occupations in advanced economies (Blinder 2006).

*Rosemary Batt is the Alice H. Cook Professor of Women and Work, ILR School, Cornell University; David Holman is Senior Researcher at the Institute of Work Psychology and Management School, University of Sheffield; and Ursula Holtgrewe is a Senior Researcher at FORBA (Forschungs- und Beratungsstelle Arbeitswelt), Vienna.

This study is based on the Global Call Center Research Project, with participation of over 50 researchers listed in Appendix A and generous support from the numerous sponsoring organizations listed in Appendix B. The authors particularly thank the Russell Sage Foundation for supporting both overall coordination and several national studies.

A data appendix with additional results, and copies of the computer programs used to generate the results presented in the paper, are available from the first author at NYSSILR, 395 Ives Hall, Cornell University, Ithaca, NY 14853; e-mail rb41@Cornell.edu. Requests for data specific to a particular article in this symposium should be directed to the corresponding authors.

Industrial and Labor Relations Review, Vol. 62, No. 4 (July 2009). © by Cornell University.
0019-7939/00/6204 $01.00

This special issue of the *Industrial & Labor Relations Review* is concerned with the globalization of service activities that rely on advances in information technologies. Specifically, we focus on the emerging call center sector—a set of organizations that manage customer service and sales transactions across a wide range of product markets and industries. These operations are representative of what is new in the globalization of service work. They are located in many parts of the world, offer remote service via technology, and are displacing establishments that provided placed-based service in local or protected markets. In addition, because call centers require relatively little capital investment, they may be easily relocated from one place to another in response to economic or political challenges. Thus, they are emblematic of the uncertainties created by globalization. In this context, we examine the meaning of globalization: how widespread is global competition and to what extent do we observe a convergence toward similar models of management and employment relations?

The research in this volume extends the literature on comparative political economy and industrial relations. We are interested in how national institutions and historical legacies or path dependence shape distinct approaches to management and employment practices within and across countries in new economy service activities. We also draw on the insights from organization and management research that has traced the activities of leading multinational corporations in restructuring their operations and developing networked approaches to production (Gereffi and Korzeniewicz 1994) or off-shoring of service work (Dossani and Kenney 2003). This perspective provides insights into how these actors, operating in an increasingly unconstrained market space, learn from one another and spread management practices and innovations across international boundaries.

In drawing on these literatures, we consider the relative importance of different institutional rules and employer strategies in shaping the employment systems of new service activities. How do institutions and employer behaviors interact to produce different outcomes within and across countries? Do patterns in new service activities resemble those found in past studies based primarily on the experience of manufacturing? On the one hand, we bring a comparative institutional perspective to the study of globalization in services. For example, rather than view Indian call centers as a unique case, as they are often portrayed (Bain and Taylor 2008; Poster 2007), we situate them in the more general context of the explosive growth of call centers in most countries around the world over the past decade. The Indian story has many unique features, but it is one of many national stories. On the other hand, we bring the study of global service work to the field of comparative employment systems. That literature has drawn almost entirely on the experience of a shrinking core of manufacturing industries with deep institutional legacies (Maurice, Sellier, and Silvestre 1986; Streeck 1991; Thelen 1991, 2005; Turner 1991) or, occasionally, service industries such as banking and telecommunications with a history of regulation and unionization (Katz 1997; Locke, Kochan, and Piore 1995; Regini et al. 1999). How resilient are institutional legacies of more recent vintage, in sectors with low union coverage, in semi-skilled jobs where occupational training systems are undeveloped, and among lower-skilled or minority and female workers with weaker attachment to the labor market? Under what conditions do old institutions influence new economic activities that emerge outside of traditional boundaries?

Also, following a long tradition in comparative industrial relations, we take a sectoral approach because industries are the nexus of competitive interaction among firms and establishments, with actors developing specific products, services, and technologies that shape the demand for labor and the approach to work practices and labor relations. The strategic choices of actors, in turn, create customary practices and institutional legacies (Doeringer and Piore 1971) that shape the opportunities and constraints for future behavior.

We focus on call centers because they are new production units, or business functions, that are taking on the features of an emerging sector. Governments in advanced and emerging market economies alike view them as a source of employment and economic development. They are a large and growing sector in many countries. The tasks they fulfill—customer service, sales, and technical assistance—are ones that historically provided good jobs in advanced economies. These jobs were filled by insurance agents and claims adjusters in local businesses, tellers and service representatives at branch banks, order clerks at telephone companies, or technicians in field offices—all working in relatively protected labor markets, serving a variety of local customers in face-to-face interactions that required considerable independent judgment and interpersonal skills. They provided decent incomes and stable employment for a largely female work force; and where unionized, they provided high relative wages and middle-class stability (Batt 2001). However, unions now find it particularly difficult to organize workers in these footloose operations (Frost and Campbell 1997; Holtgrewe, Kerst, and Shire 2002; Doellgast, Batt, and Sørensen, forthcoming). Thus, a central question is whether they will yield jobs with decent wages, good working conditions, and employment stability in the global economy.

Call centers also are problematic for firms and consumers. Most companies remain uncertain about how to position these operations. Initially viewing these centers as a means to reduce costs and create scale economies in service and sales channels, companies started out by adopting cost minimization strategies, except where gaining customer acceptance and legitimacy for the new service took precedence (Holtgrewe and Kerst 2002). But these production line approaches to work organization led to classic managerial problems of low morale and high turnover and absenteeism (Holman 2002; Deery, Iverson, and Walsh 2002), creating poor management-employee relations as well as high levels of customer dissatisfaction. Consumer complaints about poor service quality have been widespread, leading companies to continually amend their policies. Understanding the range of management practices and how they affect outcomes such as turnover, job and service quality, and wages is an important task for informing firm-level policy as well as public policy.

From a theoretical perspective, this context offers a critical case for examining the convergence-divergence debate. With few barriers to entry, small capital outlays, off-the-shelf technologies, a technology-vendor and consulting industry that operates globally (Djelic and Quack 2003; Flecker 2007), and jobs that require modest formal education, call center operations should converge toward a universal system. Moreover, given that these operations are relatively low–value-added and subject to intense price competition, we would expect them to converge toward a low-skill, low-wage model of production and employment relations. If institutions matter in this case, then they should matter for a range of higher-skill and more complex service occupations.

This special issue also offers some methodological advances over past international studies. It is larger in scale, scope, and methodological integration. Some 50 scholars in 17 countries participated in a multi-year collaboration, which has since expanded to include Japan and China. The countries represented in the study are emerging market economies as well as advanced economies; and each country team utilized a similar methodology and establishment-level survey. The resulting international database, which forms the basis for the articles in this issue, includes information on almost 2,500 establishments. Researchers also conducted extensive field research to complement the surveys and provide the institutional material to help inform and interpret the quantitative results.

In addition, unlike many comparative volumes that provide country-by-country analyses, our approach is thematic, with each article providing a cross-national analysis focusing on a particular theme. Articles in this issue consider the role of unions in shaping the quality of jobs; the factors that influence wage levels and wage inequality; cross-national similarities and differences in the use of contingent work arrangements; the relationships among strategic human resource management, work design, and organizational outcomes; and whether technology, selection, and training are complements or substitutes in call center operations across countries.

Comparative Institutional Perspectives

The current debate on convergence and divergence in economic systems draws on several decades of research in comparative political economy and sociology (Berger and Dore 1996; Crouch and Streeck 1997; Hall and Soskice 2000; Djelic and Quack 2003; Herrigel 2005; Bosch and Lehndorff 2005; Streeck and Thelen 2005) and industrial relations (Kerr, Dunlop, Harbison, and Myers 1964; Locke, Kochan, and Piore 1995; Ebbinghaus and Visser 2000; Waddington 2005). The debate considers whether the expansion of international activity will lead to convergent or divergent management practices and employment relations.

Various perspectives on the debate have emerged. Convergence theorists argue that firms will converge toward best practice, as markets weed out those with less competitive strategies. They echo the functionalist arguments of Kerr et al. (1964), who believed that firms around the world would adopt a set of best practices, driven by advances in science and technology. Theorists of divergence emphasize that different logics of economic behavior exist because they are historically embedded and path dependent. Some have attempted to reconcile these arguments with the idea that both forces are at play at different levels, giving rise to the notion of convergent divergences (Katz and Darbishire 2000). Finally, some skeptics argue that national systems vary to such an extent that the question of convergence versus divergence is not the most relevant question to consider (Whitley 1999).

The literature on varieties of capitalism brings together a large body of research on why divergent strategies are likely to continue (Jackson and Deeg 2006). National systems have distinct configurations of capital, labor, and product market institutions and welfare states that, taken together, provide economic actors with different opportunities and constraints, or different institutional resources (Thelen and Streeck 2005), for competing in global markets. In this issue, we focus primarily on how labor market institutions influence management and employment practices. This is consistent with much of the varieties of capitalism literature, which has viewed labor market institutions, work organization, and labor-management relations as central to defining the character of national systems (Maurice, Sellier, and Silvestre 1986; Thelen 1991; Streeck 1991; Boyer 1997; Thelen and Streeck 2005; Crouch 2005).

The most parsimonious theoretical framework differentiates coordinated from liberal market economies based on how they organize economic action (Hall and Soskice 2001). We begin with that framework in this volume because it has "a distinct advantage in testing hypotheses with the use of statistical models" (Jackson and Deeg 2006:32). Whereas liberal market economies, such as Canada, the United States, the United Kingdom, and Ireland, rely primarily on markets and prices to govern economic activity, coordinated economies such as those in continental Europe and Scandinavia rely more on political processes of negotiation, persuasion, and consensus building. In theory, these represent different logics of action rather than a continuum of behavior, with actors in liberal economies relying primarily on firm strategies and managerial prerogative to control work force effort, and coordinated economies drawing more on the collective activities of employer and labor associations to gain labor stability and cooperation.

While most institutional theorists generally agree on which countries fit the liberal market category, they differ on how to define coordinated economies. Some, such as Whitley (1999), Amable (2003), and Crouch (2005), argue that the dichotomous framework of Hall and Soskice is too simplistic, and favor more differentiated typologies. Differences among coordinated economies may lead to meaningful differences in outcomes; and as market liberalization has intensified competitive pressures on firms, they have pushed to loosen market regulations in different ways, depending on nationally specific economic conditions, institutions, and power relationships. For example, while research has demonstrated an overall trend toward decentralization in bargaining systems (Katz and Darbishire 2000), the ways employers and unions have restructured national systems differ markedly among coordinated economies in the EU. These systems vary in union density, the relative importance of industry- and firm-level bargaining, the role of works councils at the firm and establishment levels, and the extent of reliance on mandatory or voluntary compliance mechanisms to extend bargaining coverage to employers who are not members of employers associations.

Compared to Denmark, France, and Austria, for example, the German industrial relations system has undergone considerable fragmentation in recent decades, with declines in bargaining coverage, union density, and employer compliance with industry agreements (Yamamura and Streeck 2003; Patterson and Green 2005; Bosch and Weinkopf 2008; Caroli and Gautie 2008; Westergaard-Nielsen 2008). These "small" differences should lead to meaningfully different employment systems and outcomes among coordinated economies, calling into question whether the overall category of "coordinated" is theoretically meaningful.

Alternatively, the framework of coordinated versus liberal economies may be able to accommodate theories of variation at lower levels of analysis. Research in comparative industrial relations, for example, has shown that while some overall similarities exist across coordinated economies in their reliance on bargaining among peak labor and employer associations to maintain economic stability, these countries also differ in the level of coordinated bargaining and how it is achieved (Calmfors and Driffil 2002; OECD 2004). Under this scenario, we might expect to find overarching similarities among coordinated economies that distinguish them collectively from liberal market economies, with additional variation explained at the national and sub-national level.

The convergent divergences hypothesis accommodates this notion of layering at different levels of analysis (Katz and Darbishire 2000). On the one hand, most countries have experienced some level of deunionization, deregulation of labor markets, and decentralization in collective negotiations. Bargaining power has shifted to employers, creating more space for the role of strategic choice in organizations and allowing managers to borrow foreign work practices, such as lean production and performance-based pay. This diffusion of strategies has led to a convergence across countries in the "menu" or range of work and employment practices that employers adopt. It has created more differentiated systems of work and pay within countries because some employers may retain traditional practices while others adopt new ones. Some workplaces may retain their union coverage and high relative pay and working conditions, while others may emerge outside of traditional industrial relations systems and offer lower pay and job quality. Similarly, some employers may compete on the basis of high value-added goods and a skilled work force, while others may pay low wages in order to compete based on low prices.

On the other hand, because countries have different institutional legacies or "starting points," and different industrial relations systems, they vary in their ability to absorb new work practices from abroad; and even where they do absorb these practices, they transform them in the process. Lean production, for example, has quite different characteristics in Denmark, the United Kingdom, and Japan. Differences in the implementation of new work practices depend in part on the strength and bargaining rights of unions or works councils (Doellgast 2008). Thus, differences in national systems lead to differences in the distribution and implementation of new employment practices and the magnitude of within-country inequality.

This volume thus draws on the rich literature on varieties of capitalism and situates the emerging call center sector in the context of current debates. However, a major limitation in this literature is its failure, to date, to include emerging market economies. There have been a few exceptions, including the work of Whitley (1999) and Orru, Biggart, and Guillen (Orru et al. 1997; Biggart and Guillen 2002); but in general, existing research provides little guidance on how to conceptualize emerging markets in relation to coordinated or liberal market economies. Call centers in these economies, however, are competing with those in advanced economies, thus requiring a broader framework of comparative political economy to analyze similarities and differences across national economic systems. Emerging market economies do not fit neatly into a single category, as their geographic locations, cultures, and colonial histories are radically different. Yet, they share some similarities in labor market institutions and political economic conditions vis-à-vis the global economy. The emerging market economies in this study (Poland, Brazil, India, South Africa, South Korea) are characterized by a legacy of decentralized bargaining; a weak overall union movement, with some pockets of strength and militancy; economic crises that have undermined union strength; and on-going problems of unemployment and an informal economy that create highly segmented labor markets. These characteristics suggest that the industrial relations systems in these countries are unlikely to influence employer strategies in highly mobile, new sector activities such as call centers.

The papers in this volume assess whether evidence from this sector supports the predictions of the varieties of capitalism literature, while examining the evidence on emerging market economies from a more exploratory standpoint. We consider variation in employment practices and outcomes at different levels of analysis: between coordinated, liberal market, and emerging market economies; among the countries in each of these groups; and within countries, based on variation in collective representation and employer business and HR strategies.

The Emerging Call Center Sector

In taking a sectoral approach, we are able to compare "apples and apples" across countries—organizations that operate in a similar market space with a similar range of strategic choices in technologies and service offerings (Hollingsworth, Schmitter, and Streeck 1994:13). Call centers represent an emerging sector because, while no clear industry boundaries exist, they compete against each other in a defined market space. The product market consists of managing service and sales transactions between provider firms and their customers. These firms also compete in the same or overlapping labor markets, employing semi-skilled workers with competencies in computer literacy, numeracy, and interpersonal communication (Batt 2002). Thus, the choice of call centers allows us to offer some new insights into the debate on varieties of capitalism and address some critiques of the existing literature, such as its lack of attention to emerging market economies. The findings from call centers also may offer insights for other new economy service and high tech activities that have weak institutional legacies and that have emerged in the current period of heightened international competition.

The sector also poses unique theoretical and methodological challenges, as these operations have a more complex institutional legacy than that found in most industry studies. Most centers began as in-house operations serving the customers of their own firms. Many began as local service bureaus that were later consolidated into larger centers accessed via technology. Thus, each in-house center reflects the historic employment practices—and collective bargaining contracts, where they existed—of the particular firms and industries in which they are embedded. Call centers in banking, telecommunications, manufacturing, retail, utilities, publishing, and the public sector inherited features that distinguish them from one another in terms of, for example, the character of labor-management relations and collective bargaining, the level of complexity of technical systems, product features, the demand for skills, and the type of customer base served.

However, the level of competition and space for strategic choice expanded in the 1990s, as most countries undertook national deregulation of service industries such as banking, telecommunications, and utilities (Katz 1997; Regini et al. 1999). Since then, EU actions to harmonize regulation in these sectors and permit trade in services have further heightened competitive pressures and organizational restructuring. At the same time, new call center technologies have provided opportunities and incentives to restructure and consolidate service operations in new ways. In addition, many service and sales interactions are easily separated into discrete tasks, making it possible to fragment jobs into those serving different customers, products, or service hours. Using call distribution systems and skill-based routing technologies, firms could create specialized units dedicated to particular products, services, or customer segments. These market segmentation strategies increase the division of labor, allowing companies to achieve better scale economies and to set up differentiated job structures and pay hierarchies based on the value of products, services, or customer interactions.

Research has shown, for example, that U.S. banks have differentiated centers both by customer segment and by product, with retail banking and credit card operations offering lower-quality jobs and lower pay, and mortgage and insurance centers offering higher-quality jobs and higher pay (Hunter et al. 2001). Telecommunications firms, by contrast, have differentiated centers by customer segment—mass market, small business, national business, and global accounts—with differentiated jobs, skills, discretion, and pay (Batt 2000, 2001).

Advances in call center technologies coupled with the decline in transmission costs also allowed employers a greater range of strategic choice in what work they kept in-house and what they outsourced to subcontractors or sent off-shore. Since the early 1990s, subcontractors have grown rapidly to serve primary firms, as barriers to entry were low and off-the-shelf technology easy to acquire. These subcontractors created employment models from scratch, often relying on equipment vendors who provided state-of-the-art call center technologies and standard operating protocols, with cost-driven employment strategies derivative of these operating systems.

Whether firms use subcontractors as complements or substitutes for their in-house operations, however, is an open empirical question. Some research suggests that they primarily use subcontractors—whether domestic or off-shore—for the most transactional work: outbound telemarketing, inbound calls for simple inquiries, credit card activation, reservation confirmations. For example, Batt, Doellgast, and Kwon (2006) found systematic differences in the quality and complexity of jobs, pay levels, and turnover between U.S. in-house centers, U.S. subcontractors, and Indian off-shore subcontractors. Firms are much more likely to retain in-house call center services for their business or higher value-added customers. In our fieldwork for this study, managers of multinational subcontracting firms complained that, while they wanted to provide higher value-added services, they were not getting that kind of business. Other research shows that employers have used subcontractors to complement the work of in-house centers by outsourcing overflow calls or calls during "unsocial" hours—during evenings or weekends (Arzbächer et al. 2002; Doellgast 2008; Holst 2008). However, increasingly, some employers have created competitive contests between in-house centers and subcontractors at home as well as off-shore, with calls allocated to those that produce the highest volumes at the lowest costs (Doellgast and Greer 2007; Dunkel and Schönauer 2008). This "whipsawing" in effect treats in-house centers and subcontractors as substitutes, intensifying cost competition and putting downward pressure on wages and job security.

In sum, despite the fact that call center agents perform generally similar service and sales functions, the extent of variation in jobs, pay, and working conditions appears to be considerably greater than what would be found, for example, among production workers in particular manufacturing industries, the empirical base of most of the literature on industrial relations and varieties of capitalism (for example, Thelen 1991; Turner 1991; Locke 1992). The institutional fragmentation found in call centers is similar to that found in other new service activities, such as IT services, software programming, business process consulting, new media work, web design, and other ancillary services that firms purchase from suppliers.

How do the characteristics of this sector affect predictions relevant to the convergence-divergence debate? While each of the empirical papers in this volume presents a series of specific hypotheses, we can specify some overall predictions for the study as a whole. First, with respect to sources of convergence, we would expect the easy availability of similar technology coupled with the low barriers to entry to lead to considerable convergence in those parts of operations most influenced by technology, such as the design of work and level of standardization in call handling and performance metrics.

Second, with respect to sources of divergence across countries, we would expect national labor market institutions to affect other parts of the employment system, such as the level of education of the work force, the quality of work life, the level of pay dispersion, and the level of turnover. In addition, we would expect the level of union density and centralization in collective bargaining to be particularly important factors shaping the extent to which inequality in jobs and pay exists among call center workers. More centralized systems, with mandatory extensions of contracts or voluntary norms of compliance, allow negotiated agreements to cover a broader swath of employers. This would suggest that differences between coordinated and liberal market economies would be notable; however, those coordinated economies that have experienced considerable decentralization in bargaining systems are likely to resemble liberal market economies more than has been true in the past.

Third, with respect to the mix of convergent and divergent patterns, we would expect that even countries with mandatory or voluntary compliance mechanisms would find it difficult to influence the behavior of subcontractors, who operate outside of industry boundaries. Unions have found it difficult to organize call centers because these establishments may be easily dismantled and moved, they make considerable use of contingent and part-time workers, and their overall work force turnover is high. In addition, because many unions represent call centers in their own particular industry, they often have fought each other in jurisdictional battles over who should represent workers in subcontractor firms. The result is that most subcontractors remain unorganized.

Methodology

The Global Call Center (GCC) project was initiated in 2002 by researchers in the United States and United Kingdom, who had examined the emergence of this sector in the 1990s and who wanted to extend their previous work both theoretically and cross-nationally. By the early 2000s, the globalization of service work became an important topic, as large multinationals increasingly experimented with the outsourcing and offshoring of work to emerging markets in India, South Africa, and the Philippines (Huws 2003; Poster 2007). At the same time, the dramatic growth of these operations in Europe led to new research on the topic in several countries (Holtgrewe, Kerst, and Shire 2002; Deery and Kinnie 2004). To expand the project, scholars were recruited who had a strong research track record and interest in the management and employment practices of call centers. Participation in the project was conditional on country research teams' agreement to follow a common comparative qualitative and quantitative methodology (detailed below) and contribute their survey data to an international database, in exchange for access to it.

Given that our research focused on the global scope of call center operations, we were inclusive rather than exclusive, attempting to include a large number of diverse countries so that we could assess the meaning of "globalization" in this context. We recruited researchers from countries that would provide the basis for meaningful comparisons of different national institutional settings across coordinated, liberal market, and emerging market economies. However, although the countries in the study represent a reasonable sample of coordinated, liberal market, and emerging market economies, they were not hand-picked based on specific criteria; rather, participation depended on the interests of country teams and on their ability to fund their own projects.

The research teams responsible for data collection in each country are listed in Appendix A. They include some 50 researchers in 17 countries (Japan and China were added after the initial wave of data collection, and so are not part of the database for this volume). Project sponsors are listed in Appendix B. This recruitment process produced a research team covering a wide range of disciplines (human resource studies, industrial relations, occupational psychology, political economy, sociology) and with expertise in a variety of methodologies (survey, case study, cross-national comparative research). The multidisciplinary resource base was valuable for solving various theoretical and methodological challenges.

A major challenge was to implement the research methodology consistently across countries. To do so, project leaders had initial one-on-one meetings with each country team to reach agreement on the research methodology, including how the survey instrument would be translated and piloted with focus groups; how the population of establishments would be identified and the sample selected; and how relatively high response rates would be ensured.[1] The complete details on survey methodology are discussed below and found in Appendix C. We also established guidelines for qualitative research, including the types of questions to address and the range of informants to interview: managers at various levels of the organization, employees where possible, union representatives, industry experts, and government officials.

Survey Development and Administration

The establishment-level survey is based on previous surveys of business strategies and human resource practices in call centers, developed by members of the U.S. and U.K. research teams and used in earlier published studies (Batt 2000, 2001, 2002; Wood, Holman, and Stride 2006). The U.S. and U.K. teams revised the survey for the international study based on pilot-testing and face-to-face interviews with call center managers. The core survey covers theoretically driven questions on the role of institutions and management strategies in this setting. Topics included market conditions, customer segments, business strategies, organizational features, work design, human resource practices, non-standard employment practices, wages, tenure, turnover, absenteeism, use of government programs, and collective bargaining coverage.

The survey combines context-specific questions based on our prior call center surveys; questions concerning actual management and employment practices, based on national surveys such as the British Work and Employment Relations Survey (WERS) and similar surveys in the United States (Osterman 1994); and multi-item scales measuring constructs such as job discretion and performance monitoring from organizational behavior research (Holman 2002; Holman, Chissick, and Totterdell 2002; Wood, Holman, and Stride 2006). Each country team translated the survey, piloted it again using interviews or focus groups, and modified questions to make them appropriate for their national context. The presence of bilingual speakers in each team also facilitated the translation process.

Survey administration occurred from 2003 to 2006. The respondent was the senior manager at each center—typically the general manager, senior operations manager, or senior HR manager. Establishment-level surveys are more reliable than corporate-level surveys (Gerhart, Wright, McMahan, and Snell 2000) because managers are more familiar with the establishment in which they work and human resource practices are more homogeneous. Because workplace practices vary by occupational group within establishments, we asked respondents to answer questions as they applied to the "core" occupational group (Osterman 1994; Batt 2001)—in this context, call center agents. Where call centers served more than one customer segment, respondents answered

[1]To improve cross-national coordination, researchers engaged in regular conference calls, emails, and three international workshops in 2004, 2005, and 2007 to discuss theoretical and methodological issues and to report initial findings. As only a handful of people knew each other before the start of the project, we used these communications and workshops to identify shared thematic interests—such as the role of unions in shaping job quality or strategic human resource management and performance. These thematic collaborations became the basis for the empirical articles in this volume.

questions for the agents serving the largest segment. Every effort was made to take a consistent approach to survey administration, but there was some variation across countries (see Appendix C). Nine countries used telephone surveys, four used on-site visits, and the remainder used a combination of mail, email, and fax. These differences were due largely to local conditions. For example, in the emerging market economies of Brazil, India, South Africa, and South Korea, the teams used on-site interviews because survey research in these countries is relatively undeveloped and mail and telephone surveys yield particularly low response rates. In the United Kingdom, telephone interviews were used in combination with a postal survey, as many managers expressed a preference for filling in a paper-based version of the survey.

Sampling Strategy

Several steps were adopted to establish a consistent approach to sampling, but some variation occurred across countries (Appendix C). Identifying the population of call centers was the most difficult step, because most countries have no government statistics on these establishments. Current nomenclatures of economic activity, such as the European Union's NACE (an industry classification system), only recently have added call centers as a category. Thus, national statistics tend to underreport the number of these operations—particularly the number of in-house units within primary firms. Each country team chose the sample from the largest available source, which in practice meant the membership list of the national call center employers' association, supplemented by on-line lists, telephone books, and lists from regional economic development agencies. We found that our data on the number of centers by sector and by in-house/subcontractor status were generally consistent with estimates provided by other available surveys of call centers. Exceptions include the United States, where the telecommunications industry was over-sampled in our study, and Germany, where subcontractors were over-represented. All of the papers in this volume use both ownership status and sector in their analyses.

In several countries, the population of call centers was small enough that close to the entire population was surveyed (Austria, Denmark, Israel, Poland, Spain, South Korea). Other countries used a random sampling strategy (as they did not have enough information to create a meaningful stratified sample) or a stratified sample by sector and size (United States, France). All papers in this volume control for sector and establishment size. For the emerging market economies of Brazil, India, South Africa, and South Korea, the on-site survey administration meant that researchers needed to focus on one or a few geographic areas (São Paulo in Brazil, Seoul in South Korea, six primary "call center cities" in India, two primary "call center cities" in South Africa). They identified the largest list of call centers available and administered the surveys wherever they could get access to establishments. Thus, the samples are large and non-random.

The resulting sample includes 2,477 call centers, which cover a work force of about 475,000. Most of the countries have a sample size of between 100 to 200 observations, with samples of less than 100 in the smaller or emerging market economies, and larger samples in the United States and Canada. Every effort was made to increase the response rates with frequent follow-up calls and emails. One country (the Netherlands) was excluded from the quantitative papers in this volume due to a low response rate. The weighted response rate for the remainder of the dataset (16 countries, 2,359 observations) was 72%; the unweighted country average was 54%.

We also examined potential biases in the data. The most important, we believe, stems from the use of employers' association lists to identify the population of establishments. This source biases the sample toward the better-operated centers because association members tend to be larger and more established operators, often part of large national or multinational corporations. Similarly, in the on-site interviews in emerging market economies, it is probable that better-run centers were more willing to have academic researchers come on site and conduct interviews. This leads us to expect that the sample, in general, is biased toward larger, more established centers with more formalized human resource practices and higher wage levels than would otherwise be expected.

International Data Set Creation and Variable Creation

Although each research team was responsible for inputting the data from the survey it conducted, the process of amalgamating the data sets from each country was centralized and conducted by statistician Chris Stride from the Institute of Work Psychology, Sheffield University, who has extensive experience in creating and working with large, complex datasets. Each country was required to provide the survey data on the core questions according to a predefined format with consistent variable names. After data integration, the amalgamated data set was sent back to research teams to check. The final dataset also included a set of specifically created variables and scales to ensure consistency in variable definitions across papers in this volume.

The variables used by papers in this volume are defined in Appendix D. The means and standard deviations of variables, by country, are found in Appendix E. The reliability scores for scales are found in each paper, as each paper uses a slightly different sample, depending on model specifications. In a few cases, authors created a specific index based on the literature they were addressing. These indices, and the specific reasoning behind them, are found in the individual papers that use them.

We coded each country as having one of three types of economy: coordinated, liberal market, or emerging market. Coordinated economies are Austria, Denmark, France, Germany, Spain, and Sweden; liberal market economies, Canada, Ireland, Israel, the United Kingdom, and the United States; and emerging market economies, Brazil, India, Poland, South Africa, and South Korea. The assignment of countries to the categories of liberal market or coordinated economy was based on Hall and Gingerich's (2004) classification of twenty developed nations, although there was one exception, Israel, which is excluded from Hall and Gingerich's classification schema. We classified Israel as having a liberal market economy, in keeping with recent research (Cohen, Haberfeld, Mundlak, and Saporta 2003; Mundlak 2007). As discussed above, the emerging market group in some ways represents a residual category, as there are large differences in the colonial histories and national institutions of these countries; but current similarities exist in their labor market conditions and location in the global economy. For purposes of empirical analysis, we begin by grouping them together and then assess the utility of this categorization.

Findings

Our findings indicate that the call center sector has a complex pattern of convergence and divergence in management and employment practices, which is best understood as a multi-level phenomenon. It varies according to the specific dimension of the employment system we consider. Across all countries, for example, the sector looks quite similar in terms of the scope of markets, service offerings, technologies, and some organizational features—dimensions of work that are less influenced by institutional rules or norms. Beyond these similarities, however, we find divergent patterns in the organization of work, human resource practices, and labor relations—those dimensions that are more influenced by national laws, industrial relations systems, and institutional norms. Important, statistically significant differences distinguish coordinated economies as a group from liberal market and emerging market economies—particularly in the organization of work, wage dispersion, and collective representation. Beyond this, however, national variation is salient, particularly for emerging market economies, which, as other studies have found, do not have many patterns in common (Orru et al. 1997; Biggart and Guillén 2002).

In addition, important patterns of subnational variation exist in most countries, based on the roles played by unions and works councils, as well as by business strategies of market segmentation and subcontracting.

These are related to within-country variation in work organization, the use of contingent staffing, and levels of pay—although the size and significance of these differences varies across countries. Findings at this level are consistent with a pattern of simultaneous convergence and divergence (Katz and Darbishire 2000). For example, different business strategies lead to statistically significant differences in the quality of jobs and pay within most countries, but the magnitude of these differences varies across countries, depending importantly on country-specific institutions and laws. To illustrate these patterns in the discussion below, we bring together descriptive statistics from our international data, examples from our fieldwork, and the results of multivariate analyses from the papers in this volume. The country-by-country descriptive statistics are found in Appendix E.

Convergence: Markets and Technology

In all of the countries in this study, call centers represent a recent development—an emerging set of activities, initially led by the firms in the telecommunications and financial services industries. Most centers deal mainly with inbound calls from customers (79%), rather than outbound calls or solicitations to customers (21%). The typical or median call center in this study was 7 years old in 2007, with a low of 4 years old in India and a high of 12 years old in the United States. These figures suggest that the sector emerged in most countries within a relatively compressed timeframe of the same decade, with some countries more advanced (for example, the United States) and others lagging somewhat behind (for example, India). Of course, this estimate is suggestive rather than definitive, because our data cannot take into account the rate of survival of call centers and whether this varies cross-nationally. However, by using the median we are reducing the influence of centers that are very recent and those with longer trajectories in traditional industries.

In addition, this idea of a parallel development of the sector across many countries is consistent with what we know from our fieldwork about changes that took place in the 1990s across the globe: call center technology became widely available; long distance transmission costs declined rapidly; pioneering industries such as telecommunications and financial services were deregulated in most countries; new multinational call center providers emerged; and technology consultants, such as Datamonitor, were active in helping companies set up centers in countries around the world.

Global Trade and Employment Patterns

Our data also document the extent to which call center services are globally traded. In our survey, we asked managers whether the markets they served were primarily local, regional, national, or international. Despite the fact that centers are highly mobile and that transmission costs have declined substantially, we found that most call centers were primarily oriented toward their own domestic markets. Thirty percent of all centers primarily served their local or regional markets, while 56% served their own national market, and only 14% served the international market. Given that our data are biased in favor of centers owned by established corporations, these numbers may understate the percentage of the market that was locally or regionally oriented. These figures did not vary substantially across countries, with the exception of those that specialize in off-shore services: India, Ireland, and Canada. Although Canada is rarely noticed as a major off-shoring location, it has become an important site for subcontractors serving U.S. corporations because of its contiguity to the United States; its linguistic, cultural, and time-zone compatibility with its neighbor; its government-provided health care system; and its currency, which usually has a low rate of exchange with the U.S. dollar. The Canadian national study found that almost one-third of establishments surveyed focused on "nearshore" services to the United States (van Jaarsveld et al. 2007).

Our field research also confirmed that the international spread of services is uneven and based on historic linguistic and post-colonial ties: between France and French post-colonial countries such as Morocco and Tunisia; Spain and Latin America; the United Kingdom and Ireland, India, and South Africa; and the United States and Ireland, India, Canada, and the Philippines. Language and culture constrain the locational choices of corporations, creating a pattern of off-shoring that differs substantially from that found in manufacturing, where cost and access to markets are primary drivers.

This pattern of the diffusion of call centers around the world is different from that of globalization in manufacturing, which is characterized by a *shift* in employment from advanced to emerging market economies. While evidence suggests that call center employment is growing more rapidly in countries such as India and the Philippines, there is little evidence that employment is *shifting* from the advanced to emerging markets. Moreover, our data suggest that off-shore call center services represent a much smaller proportion of global activity than media accounts have suggested.

Accurate call center employment data are difficult to procure, as governments do not collect these data; but we have compiled estimates for each country based on a variety of sources (See Appendix C). In the United States and Canada, call centers employed about 3% of the work force in the early 2000s (Datamonitor 2001, 2003, 2004; van Jaarsveld et al. 2007). Batt et al. (2006) estimated U.S. call center employment in 2004 at 4 million workers (almost 3% of the work force), based on an analysis of occupational data from the U.S. Bureau of Labor Statistics. Our analysis of these data for 2007 suggests that call center workers still comprise about 3% of American workers. They represent about 1% of the work force in Denmark, France, and Germany, and 3% in the Netherlands and the United Kingdom (Lloyd, Weinkopf, and Batt 2009). Employment in these centers grew at an estimated 20% annually in the 1990s in the advanced economies. The growth rate slowed in the 2000s, but call center employment as a percentage of the work force appears to be stable or growing in advanced economies.

The employment picture in emerging market economies is more difficult to capture, and estimates come entirely from interested parties—industry consultants and employers' associations. The Indian National Association of Software and Services Companies (NASSCOM), however, has a research arm with a credible reputation for accuracy (Kuruvilla and Ranganathan 2009). Call centers are categorized as part of the Business Processes Outsourcing (BPO) segment of the Information Technology Enabled Services (ITES) sector, and represent about 40% of overall BPO employment. According to NASSCOM, BPO employment grew from about 316,000 in 2003–2004 to 700,000 in 2008 (NASSCOM 2008), suggesting that call center employment grew from 126,000 to 280,000 in the same period. These employees only serve the international market, with an estimated two-thirds, or 185,000, serving the U.S. market in 2008. These numbers do not include the large and growing number of employees serving the Indian domestic market. Call center employment in other emerging market economies in 2008 includes 285,600 in China, 32,760 in Malaysia, 129,000 in the Philippines, 25,700 in Thailand, and 20,500 in Singapore (callcentres.net 2008). With the exception of India and the Philippines, centers in these countries primarily serve their own domestic market.

The international distribution of employment in the future will depend on the relative growth rates in these countries. One estimate puts growth in the off-shore call center market at more than 25% per year (Everest Research Institute 2008). The 2008 callcenters.net study estimates a growth rate of about 20% per year between 2006 and 2008. However, the percentage of centers providing international service has declined somewhat—from 67% of call centers in Asia in 2006 to 48% in 2007 (callcentres.net 2008). This is supported by anecdotal evidence that some companies are re-contracting call center work back to their home countries. Another wrinkle in attempts to calculate employment effects, however, is that call centers serving the domestic market of these countries are also growing. Thus, it is not clear whether the drop in the percentage of international service providers is due to a decline in demand or a relative increase in centers serving the domestic market in these countries.

In sum, the emergence of the call center sector is a recent phenomenon everywhere, despite the fact that this model of service interactions has deep roots in the operator service divisions of telecommunications and telemarketing companies. Employment appears to be growing in most countries, but faster in emerging markets than in advanced economies. Despite the rapid growth of employment in India and the Philippines, they still handle only a small percentage of service interactions for the two major country users—the United States and United Kingdom. In addition, with the exception of a few export-oriented countries (India, the Philippines, Canada, and Ireland), the extent of global trade in call center services is relatively limited, as most call center sectors primarily serve their own domestic markets.

Technology, Standardization, and Organizational Characteristics

The widespread availability of call center technology around the world has facilitated the diffusion of automated work processes that are emblematic of these workplaces. This technology rationalizes work practices by automatically distributing calls to agents and by enabling the collection of performance metrics (such as call handling time, wrap-up time, the number of calls per employee per day, and adherence to scripted texts) through electronic monitoring systems. The availability of these metrics allows managers to develop quite standardized requirements for employee behavior, work routines, and performance.

Standardization of work practices and electronic monitoring have been central themes in research on call centers, as monotony, routinization, job dissatisfaction, and job-related stress have been major sources of workers' complaints, reflected in high rates of absenteeism and turnover and lower levels of individual performance (Holman 2002; Holman, Chissick, and Totterdell 2002; Deery, Iverson, and Walsh 2002; Houlihan 2002; Skarlicki, van Jaarsveld, and Walker 2008).

High levels of standardization are typically found in centers serving mass market customers, or the general public, where the level of complexity of calls is modest, compared to those serving business customers with more idiosyncratic or firm-specific demands. In all countries, the overwhelming majority of employees (on average, 80%) work in centers serving the mass market or general market, where the quality of jobs is typically much lower than in business-to-business centers.

Two indicators of standardization are average call handling time and the use of "multi-channel" technologies. Call handling time—the average (mean) time to handle a call—is a ubiquitous operational measure that the typical manager keeps track of on a daily basis. It is a measure of job cycle time, or the time to complete one task before repeating it again. Most centers focus on reducing the time per call in order to minimize labor costs. The typical worksite in this report had an average call handling time of 195 seconds; variation across countries ranged from a low of 150 to a high of 240, with India being an outlier at 300 seconds.

Multi-channel technologies, by contrast, tend to reduce routinization at work by creating a variety of ways in which workers can interact with customers, including voice, email, fax, web enablement, Voice over Internet Protocol (VOIP), media blending, and electronic customer relationship management (these are defined in Appendix D). As centers adopt more sophisticated technologies, this should be a source of variation in work and employment practices. Surprisingly, however, we found that variation in call center technology across countries was modest, and relatively few centers had transformed themselves into multi-channel "contact" centers—the term used to differentiate these centers from purely voice ("call") centers. We found that the typical operation in most countries only used telephony, supplemented by fax and email.

In this volume, the article by Sieben, de Grip, Longen, and Sørensen examines the implications of making greater use of multi-channel technologies. Among the questions the authors address is whether the number of these technologies that are adopted by a call center affects investments in initial and on-going training, as well as the length of time employees take to become proficient on the job. They also explore the differential effects of specific technologies, and the relationship between technology, training, and selective hiring practices.

The particular characteristics of call center technology also influence the organizational structure of these workplaces. In particular, electronic monitoring technology reduces the need for indirect labor, so that the number of supervisors is low, spans of control are large, and the management hierarchy is flat. Managers constituted only 11% of employees in the typical call center in this study, and there was little variation in this number across countries, with the range being from a low of 7% to a high of 15%.

We also found that across all countries, call center work was defined as female work. Women comprised 69% of employees in the average call center, and this varied little across countries. The exception is India, where centers offered better than average-paying jobs, and 54% of workers were male. Our fieldwork suggests that this gendered pattern of employment was related, in part, to managerial views that this work is essentially clerical, requiring strong keyboarding skills, as well as the ability to interact politely with customers, even when they are overly demanding or abusive.

In sum, when we examine the markets, technologies, and organizational features of call centers, we see an emerging sector with a number of quite similar characteristics across very different countries and national institutional environments.

Divergence in Work Organization, HR Practices, and Collective Representation

At the level of workplace practices, however, substantial differences across countries exist in the organization of work, human resource practices, and patterns of collective representation. The papers in this volume address similarities and differences in work design, use of contingent staffing, pay determination, and collective representation. Overall, the researchers found statistically significant differences between coordinated, liberal, and emerging market economies along a number of these dimensions, and country-level differences as well.

Work Organization

Two important measures of work design in call centers, the level of individual job discretion and the level of performance monitoring, are the focus of the paper by Holman, Frenkel, Sørensen, and Wood in this volume. The estimates identify how coordinated economies differ from liberal and emerging market economies; but also yield some surprises, especially with respect to emerging market economies. In addition, the authors provide specific country-level findings and conduct a multivariate analysis of how these differences are related to important outcomes, including employee turnover, labor costs, sales, and service quality.

Doellgast, Holtgrewe, and Deery also examine employment practices associated with job quality, including high-involvement work practices, performance monitoring, and dismissal rates. Their measure of high involvement includes the level of discretion employees have, the use of teams, and the use of flexible work design. The authors identify notable differences across groups of countries by economic system, as well as variation among the countries within each of these three groups. The authors explain how these national-level differences are related to specific institutions affecting each area of employment practice, such as employment protection legislation and traditions of worker participation in decision-making.

Non-Standard Work Arrangements

In general, call centers are known for their extensive use of part-time and temporary workers to handle demand fluctuations and keep labor costs low. In the average call center, 71% of employees are full-time, 17% part-time, and 12% temporary. Demand forecasting is difficult because of large fluctuations in call volume, which may occur on a daily, weekly, or seasonal basis (Batt and Moynihan 2002); and subcontractors face more fluctuations than in-house centers because the former often juggle several contracts at once and do not know when a client may decide to terminate a contract.

However, we found that coordinated economies made substantially greater use of part-time and contingent workers than did liberal market economies, and these differences were statistically significant. These differences are arguably due to differences in employment laws. In liberal market economies with weak employment protection laws (or "employment at will"), companies may handle demand fluctuations via involuntary or voluntary turnover. In coordinated economies with stricter employment protection laws, employers are more likely to rely on temporary workers to handle demand fluctuations.

In addition, we found important differences among the countries in each of these groups. Two papers in this volume explore these country-level differences: Shire, Mottweiler, Schönauer, and Valverde examine cross-country differences among coordinated economies; van Jaarsveld, Kwon, and Frost, among liberal market economies.

Shire et al. analyze the relative importance of institutional and organizational factors in shaping the use of temporary workers. They categorize countries according to the stringency of laws protecting full-time workers as well as those restricting the use of temporary workers. While differences in regulatory regimes appear to influence employer behavior in some cases, the exceptions are striking. By contrast, firm-level strategies that retain work in-house and invest in work force skills and training are consistent predictors of the use of long-term contracts as opposed to temporary ones. Van Jaarsveld, Kwon, and Frost analyze how firms create work force flexibility and whether institutional differences among liberal market countries shape these choices. The cross-country variation they find generally supports the hypothesized influence of the labor legislation context.

Among emerging market economies, by contrast, there are no consistent patterns in the use of contingent workers and large differences among countries: in South Korea, the typical call center had 85% of its work force under temporary contracts, but in India and South Africa, few call centers hired any temporary workers at all. Our field research suggests that these patterns depend not only on labor market regulation, but also on the specific histories and market conditions in countries at the time the call center sector emerged. In South Korea, call centers emerged just after the Asian economic crisis in 1997, and employers sought ways to cut labor costs and avoid union contracts. Temporary labor contracts spread rapidly, becoming a norm throughout the call center sector (Kwon 2008). In India and South Africa, employers prefer full-time workers because of the high initial investment they must make in language neutralization and training.

Collective Representation

Differences across industrial relations systems offer one of the most salient explanations for variation in work organization and pay practices in call centers in this study. In general, we found a much higher level of collective bargaining and works council activity than we would have expected given that these operations have the capacity to relocate when faced with union organizing and unions have great difficulty organizing them. Just under 50% of call centers in the international database had some form of collective representation (unions and works councils, unions alone, or works councils alone). Thirty-five percent were covered by union agreements or unions plus works councils.

Of course, these patterns reflect the mix of countries and size of the sample for each country in the database. Representing the largest proportion of the sample (46%) are liberal market economies (primarily the United States and Canada), which have low levels of unionization compared to the coordinated economies (which account for 36% of the sample; the remaining 18% of call centers are in emerging market economies). The biases in the sampling frame favor the inclusion of large employers (relative to smaller ones), and the former are more likely to be covered by unions and works councils. However, the sampling frame also is likely to be biased in favor of subcontractors, because they are more likely to join call center employers' associations than are in-house centers, which often are already affiliated to their own specific industry employers' association. Our field research showed this pattern to be true for Germany, and to a lesser extent France.

With these caveats in mind, call centers had statistically significantly and substantially higher levels of representation in the coordinated economies in this sample than in either the liberal market or emerging market economies. Among centers in the coordinated economies, 71% had some form of collective representation (18% had union agreements only, 14% had works councils only, and 39% had union agreements plus works councils). These high levels reflect the fact that most call centers in coordinated economies continue to be operated as in-house centers, with inherited collective bargaining agreements and interest representation. In addition, three EU countries—Austria, France, and the Netherlands—have organized the sector of subcontractors; and the employers' association and unions have negotiated sectoral bargaining agreements that cover all employees working for subcontractors (Lloyd, Weinkopf, and Batt 2009).

The average level of collective representation among liberal and emerging market economies was much lower, with on average less than 20% in the former and 35% in the latter having some form of representation. However, the range of variation within these groups was large. Among the liberal market economies in our study, collective representation coverage was highest in Ireland and the United Kingdom (63% and 65%, respectively, counting coverage by a union, a works council, or both), and lowest in Canada and the United States (with union coverage of 16% and less than 10%, respectively). Similarly, among emerging markets, Brazil had high collective bargaining coverage (80%), whereas South Korea and Poland had little (less than 10% each).

An important finding in the prior literature on wage determination is that pay dispersion and the union/non-union wage gap are lower in systems characterized by high levels of centralization and coordination. In this volume, Batt and Nohara examine this relationship for the call center sector. Their findings are mostly consistent with prior findings, but some divergent patterns emerge—in particular, with Germany more closely resembling the liberal market pattern, and the United Kingdom and Israel resembling the coordinated market pattern. These findings remain statistically significant after the analysis controls for human capital, business strategies of segmentation and subcontracting, and organizational and market factors.

In coordinated economies, works councils also provide an important forum for consultation at the firm and establishment levels (Doellgast 2008). While the regulations governing works councils differ from country to country, these councils generally provide a forum for elected employee representatives to consult with management over working conditions, work redesign, and restructuring. In this volume, Doellgast et al. examine whether and how different forms of collective representation influence employment practices associated with high-quality jobs. They compare worksites in coordinated economies with unions and works councils, unions alone, works councils alone, and neither form of representation to union and non-union call centers in liberal economies. The results confirm that outcomes depended significantly on the type of bargaining structure, especially in coordinated economies, where "dual bargaining" (the presence of both a union and works council agreement) appears to have had the best outcomes for job quality.

Simultaneous Patterns of Convergence and Divergence

Business strategies that separate call center tasks by product, market segment, or function and allocate them to different call center locations often lead to increased variation in the design of work, HR practices, and labor relations within countries. We examined two of these approaches in this study: market segmentation and outsourcing strategies.

Product and Labor Market Segmentation

We found that market segmentation strategies existed in all of the countries in the study, but they were more extensive in some countries than in others. They were more widespread in the United States and United Kingdom, for example, than in most coordinated economies. This pattern does not appear to have been due to national institutional differences. Rather, segmentation strategies depended importantly on the scope of the market and sophistication of the business and marketing strategies of corporations. They depended on the ability of firms to identify discrete market segments and to create a customer base large enough to enable them to achieve economies of scale by segmenting and serving each group separately. These conditions were not present in small countries, such as Austria and Denmark.

The differences between centers serving large business and those serving the general or mass market were statistically significant along several dimensions in many countries, including the extent to which they were covered by collective bargaining. Across almost all countries, union coverage in large business centers was lower than in mass market centers, and these differences were not based on whether countries had coordinated, liberal, or emerging market economies.

The paper by Holman and colleagues also demonstrates that decisions about work design in call centers—specifically, about levels of job discretion and performance monitoring—were shaped by the customer segment served. These choices also had implications for performance outcomes.

Ownership Structures: In-House Centers and Subcontractors

The differences between in-house centers and subcontractors also are salient in most of the countries in this study. We generally found that subcontractors took on more transactional work and differed from in-house centers along many dimensions: they were newer market entrants, more likely to serve the international market, larger in size, and more likely to focus exclusively on sales and outbound calls. They offered lower-discretion jobs, had higher levels of performance monitoring, made greater use of part-time and temporary workers, paid lower wages, had higher quit rates, and were less likely to be covered by union contracts. Moreover, subcontractors have grown at a faster rate than in-house centers.

According to our international data, subcontractors' typical size was 77 employees, compared to 41 for in-house centers; the average size was 254, versus 124. These figures are statistically significantly different. Subcontractors employed 56% of all call center employees in the study, even though they only made up 33% of all call centers.

Because of these differences in size, subcontractors can make more use of automation and standardized work practices and achieve greater economies of scale. For example, the agents working for subcontractors in our study typically handled 80 calls per day, which is significantly higher than the 65 calls per day typically handled by in-house center agents. Forty-eight percent of subcontractors reported jobs with little or no discretion, compared to 35% of in-house centers. Performance monitoring in subcontractors typically occurred on a weekly basis, compared to a monthly basis in in-house centers. These patterns are consistent with research showing that client firms tend to ensure quality control by setting strict standards for adherence to standard work rules and performance monitoring.

Compared to in-house centers, subcontractors also hired a significantly lower proportion of full-time permanent employees. In the average subcontractor, 63% of agents were full-time permanent employees, 21% part-time, and 16% temporary. In in-house centers, by contrast, 74% were full-time, 15% part-time, and 10% temporary. Variation in the magnitude of these differences across countries is analyzed in the papers by Shire et al. and van Jaarsveld et al. in this volume. In addition, subcontractors invested almost 50% less in the initial training of new hires. While the typical subcontractor provided 14 days of initial training, this figure was 20 days for in-house centers. After initial training, a newly hired employee at the typical subcontractor site took 8.5 weeks to become fully qualified or proficient at work; for in-house centers, this break-in period was 12 weeks (see Sieben et al. this volume for a complete analysis). These data indicate that there were substantial differences between subcontractors and in-house centers in the level of job complexity and in the need for firm-specific skills. This pattern was quite similar across countries. It is also in keeping with the fact that client firms typically outsource their more transactional, less complex work to subcontractors.

Pay differentials also differed significantly between in-house centers and subcontractors in almost all countries in the study; but as presented by Batt and Nohara, the magnitude of differences varied across countries. Similarly, collective bargaining coverage was considerably lower among subcontractors than among in-house centers in virtually every country, but the magnitude of differences varied across countries. Unions were recognized for collective bargaining in 41% of in-house call centers and 29% of subcontractors. By contrast, there were no significant differences in works council activity, which stood at 35% of the call centers for in-house centers and subcontractors.

These differences between in-house centers and subcontractors may be explained, in part, by differences in the market and operational conditions that subcontractors face, which are considerable, according to our survey and case study research and that of others (Doellgast 2008; Batt, Doellgast, and Kwon 2006; Sørensen 2008; Flecker et al. 2008). Outsourcing involves risks for companies, as they have little direct control over quality. As a result, they often insist on vendor agreements that specify operational procedures in great detail—leading to close monitoring of operations and to an overall reduction in the discretion of both the managers and call center agents. Subcontractors also juggle multiple contracts and face uncertainty in demand, as client firms may initiate or cancel contracts on short notice.

Conclusions and Implications

In this study, we have addressed the convergence-divergence debate by focusing on new service activities that have received little attention in prior institutional research. We chose call centers in part because they represent an extreme test case: if national institutions are able to influence these relatively mobile and cost-focused operations, then we can conclude that institutional legacies are more resilient than many have supposed, and that they remain influential in shaping management and employment practices in new economic activities.

Our findings reveal a complex pattern of similarities and differences—one that we can best describe as multi-layered. We found patterns of convergence internationally along some dimensions of organizations, but divergence along other dimensions at multiple levels of analysis—not only at the level of economic systems, but also at national and sub-national levels. One of the contributions of this volume, we believe, is its unpacking of the ways in which different dimensions of the employment relationship are more or less susceptible to influence from external or international market factors. Those dimensions that are most closely related to technologies, operations management, and marketing appear to be most influenced by processes of diffusion across countries. Those dimensions that are more embedded in everyday work life and workplace relations seem to be more influenced by national institutions and organizational legacies.

Call centers in most countries are quite similar in the ways that markets have been organized and centers have specialized in particular products, industries, or service offerings. Flat organizational structures, a predominantly female work force, and relatively standardized work based on call center technologies are characteristic of these establishments across most countries and suggest patterns of widespread diffusion and organizational learning.

Divergence across different types of economic systems and national contexts is evident in alternative approaches to work design, human resource practices, and collective representation. Even in this footloose sector, we found meaningful and statistically significant differences between centers in coordinated economies and those in liberal and emerging market ones. On average, coordinated economies had better-quality jobs—when defined in terms of the levels of employee discretion and performance monitoring, which are partially reflected in lower quit and dismissal rates. Collective representation was also substantially more prevalent in coordinated economies than in the other economies, and the role of works councils was particularly important as a point of leverage for influencing the quality of work and employment conditions. However, coordinated economies also made greater use of part-time and contingent workers as a strategy to deal with employment protection legislation or avoid union contracts—a pattern that led to more precarious jobs and working conditions for a subgroup of employees in this sector.

At the national level of analysis, we also found numerous examples of employment practices that diverged from the overall pattern of differences across economic systems. Here, the role of specific characteristics of national institutions mattered; for example, Germany diverged from the coordinated pattern on a number of dimensions, and the United Kingdom and Israel diverged from the liberal market pattern. We view these findings as consistent with the idea that patterns of convergence and divergence occur at multiple levels of analysis.

The results of our analyses of emerging market countries leave many questions unanswered. On the one hand, we did find several consistent patterns: emerging market countries showed patterns of work organization, human resource practices, and labor relations that were quite similar to those found in liberal economies. In particular, the two sets of countries had similar levels of decentralized bargaining structures and wage dispersion, and similarly low levels of union power, limiting unions' ability to influence work practices in these new economy service activities. On the other hand, the emerging markets also showed many more idiosyncratic differences at the national level, which we were not able to explain and which deserve more research at the individual country level.

Perhaps most striking are the findings of within-country variation, which are consistent with the argument that parallel processes of convergence and divergence are occurring. In almost all countries, the differences between in-house centers and subcontractors are statistically significant. Subcontractors are typically larger in size, which allows them more opportunities for automation and standardization of work practices. The quality of jobs is lower than in in-house centers, as measured by levels of job discretion, performance monitoring, use of contingent workers, pay levels, and collective representation coverage. Countries vary, however, in the magnitudes of these differences, with some of the coordinated market countries having lower levels of within-country variation.

Nonetheless, even in the coordinated economies, we believe there is an emerging institutional divide based on differences between in-house establishments and subcontractors. The coordinated economies have some advantages here, because most have legally mandated works councils that offer points of leverage for improving the working conditions in subcontractor centers. However, the differences are difficult to overcome, because unions have had relatively little success in organizing subcontractors (Doellgast, Batt, and Sørensen,2009; Holst 2008).

Based on our international data, about one-third of centers in this study were run by subcontractors, but about 50% of the jobs were found there. More important, because the subcontractor sector is generally growing at a faster rate, we may observe over time an increasing shift in the distribution of jobs to this group. This general trend is particularly important when we consider the future of employment practices in this sector. To the extent that subcontractors displace in-house centers, we would expect to see an increasing convergence in management and employment practices within and across countries.

This process of institutional change may be best captured by the concept of "layering," developed by Schickler (2001) and Thelen (2002), among others. Rather than viewing institutional change as occurring primarily through exogenous shocks that create moments of crisis and readjustment, Streeck and Thelen (2005) argued that institutional change may also occur incrementally, through endogenous changes in the system. Layering refers to a process by which new policies or practices emerge and, over time, displace older institutional rules because the former grow at a faster rate than the latter. This differential growth thesis is illustrated in a set of empirical studies in Streeck and Thelen (2005), including a study by Jacob Hacker (2005) of the U.S. public pension system, which has eroded over time with the more rapid growth of private retirement plans such as Individual Retirement Accounts and 401(k) plans. While the concept of layering has been used primarily to describe changes in political institutions and the state, we believe it is applicable to institutions in the private sector as well. The use of subcontractors as an option for economic activity is not a departure from the past; but over time, firms have increasingly shifted work from vertically integrated organizations with institutionalized norms and internal labor markets to new economic actors operating outside of these norms. In our study of call centers, employers are escaping from industry-based industrial relations systems through subcontracting strategies; and by increasingly shifting work from older organizations to these new actors, they change the dominant employment model over time—from one based on labor management negotiation and collectively bargained labor standards, to one based on managerial unilateralism. Thus, while the evidence to date from our study shows that divergent management practices continue to exist, based in part on national institutional rules and norms, the pressures of liberalization are likely to continue to erode these distinctive patterns, at least in new economy services of the kind we have examined here.

Also noteworthy is the fact that media coverage and policy debates have focused particularly on the threat that off-shoring poses for labor in advanced economies. Our analysis suggests, however, that off-shoring still represents a relatively small proportion of overall employment in the sector; and most centers serve their own domestic population rather than an international one. We find that outsourcing to subcontractors within the domestic market may represent a more salient threat to the quality of jobs and pay in these types of new service jobs.

Finally, this study has several limitations that suggest areas for future research. First, while we have documented patterns of convergence and divergence at different levels of analysis, we need to more fully explain how and why these have occurred. Qualitative and historical studies can provide more compelling narratives to explain these patterns. A number of members of this project team are pursuing these avenues, as in a forthcoming special issue of the *European Journal of Industrial Relations* (Doellgast, Batt, and Sørensen 2009) on industrial restructuring and union organizing.

A second program of research is one that would empirically trace the role of technology vendors and consultants in the diffusion of policies and practices across firms and establishments—certainly in the call center sector, but also in other service activities driven by advances in digital technologies. While we present evidence of similar patterns across countries in the adoption of call center technology, organizational forms, and the categorization of markets to be served, we have not explained how and why these similarities have emerged. However, our research has uncovered case study and anecdotal evidence that U.S. firms developed call center technology at an earlier date than did firms in other countries. U.S. firms became the leaders of dissemination of call center technology, which embodied not only the specific technology, but a set of neo-Taylorist assumptions in the technical design and associated monitoring mechanisms. For example, the dominant providers of call center technology are U.S. multinationals, which are over-represented among the five firms that, together, supply two-thirds of the Asian market: Cisco (U.S. 18%), Avaya (U.S. 18%), Nortel (Canada 12%), Panasonic (Japan 12%), and Alcatel-Lucent (France-U.S. 6%) (Callcentres.net 2007).

A third and broader avenue for researchers, which we have signaled above, is to undertake theoretical and empirical work to integrate emerging market economies into the varieties-of-capitalism framework. This research could provide a more compelling typology of alternative forms of capitalist activity in these countries. The scope and scale of this international study led us to focus more on current management practices and their extent of variation than on the historical development and trajectory of work organization and human resource practices. Studies of institutional change, however, require a historical or longitudinal approach that was not part of this research program, but should be part of future work.

Fourth, our study favored a national institutional lens more than an organizational one, although we emphasized the need to focus on the intersection of institutions and employer strategies in order to understand the factors influencing alternative employment models. We took a broad view, using a combination of survey methods and field research. However, this approach needs to be complemented by in-depth analyses of lead firms and the ways in which their innovations are adopted and adapted by other firms in different countries. That is, to understand change, it is important to study the behavior of lead firms, which have the resources not only to experiment with new strategies and practices, but also to influence public policy in order to expand their options for competing in global markets. They disproportionately influence the direction of change. Thus, careful, longitudinal studies of particular lead multinational corporations—how they operate similarly or differently in a given sector, and how they influence the behavior of other firms and public policy—are important complements to the research we have presented here.

Appendix A
Research Teams Responsible for Country Level Studies

Austria

Dr. Jörg Flecker
Annika Schönauer
Forschungs- und Beratungsstelle Arbeitswelt (FORBA) (Working Life Research Center)

Australia

Prof. Steve Frenkel
Dr. Markus Groth
University of New South Wales

Brazil

Prof. Moacir de Miranda Oliveira Júnior
University of Sao Paulo
Prof. Leonardo Nelmi Trevisan
Prof. Arnoldo de Hoyos Guevara
Prof. Arnaldo J. França Mazzei Nogueira.
Prof. Paulo Roberto Gião
Maria de Fátima Silva
Prof. Pedro Lucas de Resende Melo
Pontifícia Universidade Católica de São Paulo

Canada

Prof. Ann Frost
University of Western Ontario
Prof. Danielle van Jaarsveld
University of British Columbia
David Walker
University of British Columbia

China

Prof. Fang Xu
Renmin University of China
Dr. Xiangmin Liu
Penn State University

Denmark

Prof. Niels Møeller
Technical University of Denmark
Dr. Ole Henning Sørensen
National Research Center for the Working Environment, Denmark

France

Prof. Hiroatsu Nohara
Dr. Robert Tchobanian
Dr. Caroline Morandat-Lanciano
Laboratory of Labour Economics and Industrial Sociology (CNRS)
University of Aix-Marseille

Germany

Dr. Ursula Holtgrewe
(FORBA) (Working Life Research Center)
Prof. Karen Shire
University of Duisburg-Essen
Hanne Mottweiler
University of Duisburg-Essen
Jessica Longen
University of Technology Darmstadt

India

Prof. Rosemary Batt
Cornell University

Ireland

Prof. Maeve Houlihan
Quinn School of Business
Prof. Stephen Deery
King's College London
Dr. Nicholas Kinnie
University of Bath

Israel

Prof Anat Rafaeli
Technion—Israel Institute of Technology
Prof. Iris Vilnai-Yavetz
Ruppin Academic Center

Japan

Prof. Michio Nitta
University of Tokyo
Mr. Hodaka Maeura
Japan Institute for Labor Policy and Training

Netherlands

Prof. Andries de Grip
Maastricht University
Dr. Inge Sieben
University of Tilburg
Prof. Danielle van Jaarsveld
University of British Columbia

South Africa

Prof. Chris Benner
University of California, Davis
Mr. Charley Lewis
University of the Witwatersrand
Ms. Rahmat Omar
University of the Western Cape

South Korea

Prof. Hyunji Kwon
King's College London
Dr. Hye-Young Kang
POSRI, Seoul
Prof. Byoung Hoon Lee
Chung-Ang U., Seoul

Spain

Prof. Mireia Valverde
Prof. Gerard Ryan
Prof. Ferran Mañe
Prof. María Tatiana Gorjup
Prof. Neus Martí
Prof. Matilde Villarroya
Universitat Rovira i Virgili

Sweden

Prof. Åke Sandberg
Stockholm University
Dr. Christer Strandberg
Mid Sweden University

United Kingdom

Dr. David Holman
Prof. Stephen Wood
Dr. Chris Stride
University of Sheffield

United States

Prof. Rosemary Batt,
Cornell University
Prof. Virginia Doellgast
London School of Economics
Prof. Hyunji Kwon
King's College London

Appendix B
Acknowledgment of Sponsors

Austria: Jubiläumsfonds der Österreichischen Nationalbank, FWF Austrian Science Fund

Brazil: Associação Brasileira de Telesserviços

Canada: Social Sciences and Humanities Research Council of Canada (SSHRC)

Denmark: Russell Sage Foundation

France: Russell Sage Foundation; French National Research Center; AFRC (Association Francoise des Centers de Relation Client—French Employers Association of Call Centers).

Germany: Hans-Böckler-Stiftung; Russell Sage Foundation

India: Center for Advanced Human Resource Studies, Cornell University

Ireland: UCD Business Schools, University College Dublin

Israel: Israel Ministry of Trade and Employment

Netherlands: Dutch Ministry of Social Affairs; National Contact Centre Benchmark Platform (NCCBP); Russell Sage Foundation

Poland: Hans-Böckler-Stiftung

South Africa: University of Witwatersrand; University of the Western Cape; Pennsylvania State University; Rod Jones Strategic Solutions

South Korea: Korea Labor Institute; Center for Advanced Human Resource Studies, Cornell University

Spain: AIRE program (University Rovira & Virgili); CIDEM (Catalan Government)

Sweden: Scandinavian Center for Call and Contact Services; Swedish Savings Banks Foundation; ISA Invest in Sweden Agency; 4BR consultants; Bright verksamhetsutveckling; The Swedish Call Center Association; Mid-Sweden University; National Institute for Working Life; KTH Royal Institute of Technology, Stockholm

United Kingdom: Economic and Social Research Council; Russell Sage Foundation; UK Customer Contact Association

United States: Alfred P. Sloan Foundation; Russell Sage Foundation; Center for Advanced Human Resource Studies, Cornell University

Appendix C
Survey Methodology, by Country[a]

Country	*Estimated No. CC Agents (2005)*	*Source of CC Database*	*Estimated No. Call Centers (2005)*	*No. of CCs in Database*	*Sample Size*	*Sampling Strategy*	*Survey Administration*	*Start & End Date*	*No. of Completed Surveys*	*Response Rate*
Coordinated Market Economies										
Austria	40,000	Austrian Call Center Forum, FORBA database, Internet	500	165	165	All CCs in database	Telephone	05–07 2005	96	58%
Denmark	23,000	Employers Association, phone book, Internet	350	226	226	All CCs in database	Personal contact w/email response	06–09 2004	118	65%
France	210,000	Employers Association, France telecom survey	3,100	900	340	Stratified random by sector, subcontactor	Telephone	05–08 2004	210	60%
Germany	330,000	Previous databases, Regional Development Agency lists	3,000	2,800	300	Random, plus added sites	Telephone	09–10 2004	153	54%
Nether -lands	180,000	Employers Association, related lists	1,500	800	800	All CCs in database	Mail, internet	04–08 2004	118	15%
Spain	64,000	Telemarketing Association, Official Registry of Companies in Spain (SABI), Internet, CC mgr. forums	1,500	224	224	All companies in database	On-site, telephone, postal, email	05, 05–01, 06	109	49%
Sweden	100,000	Employers Association, Benchmarking Company	1,200	642	347	All companies in database (outsourcing)	Mail, w/ telephone, email, fax	02–05 2004	161	46%

Continued

Appendix C. *Continued.*

Country	*Estimated No. CC Agents (2005)*	*Source of CC Database*	*Estimated No. Call Centers (2005)*	*No. of CCs in Database*	*Sample Size*	*Sampling Strategy*	*Survey Administration*	*Start & End Date*	*No. of Completed Surveys*	*Response Rate*
Liberal Market Economies										
Canada	512,867	Employers Association, Internet	13,424	500	500	All CCs in database	Telephone	02, 05—05, 06	387	77%
Ireland	19,500	Previous list, telephone directory, Internet, recruitment agencies	400	287	188	All with confirmed contact info.	Mail	10–12 2004	43	23%
Israel	11,000	Telemarketing Association, phone books, Internet, CC mgr. forums	500	80	80	All CCs in database	On-site	08–10 2004	80	100%
United Kingdom	742,000	Employers Association	3,500	500	418	All contactable companies	Telephone, w/ mail follow-up	03–10 2004	167	40%
United States	4,000,000	Dun & Bradstreet, Call Center Magazine	60,000	2,000	682	Stratified random, by size, sector	Telephone	02–09 2003	464	68%
Emerging Market Economies										
Brazil	615,000	Employers Association	1,000	250	250	All CCs in database	Telephone, email, on-site,	05–09 2005	144	45%
India	126,000	NAASCOM, Internet, field research	N/A	100	75	Non-random in call center cities	On-site	07, 03—08, 04	60	N/A
Poland	8,700	Federal Trade Register	300	112	112	All CCs in database	Telephone	10–11 2004	75	67%
South Africa	100,000	Multiple industry, Internet sources	1,200	1,200	326	Non-random in call center cities	Telephone, email, on-site	11, 02–06, 04	64	N/A
South Korea	330,000	Telemarketing Association, S. Korea Mgmt. Association, Internet, CC mgr. forum	2,500	250	250	All with confirmed contact info.	On-site, email, mail	06–09 2004	121	48%

[a]Copies of the International Report (Holman, Batt, and Holtgrewe 2007) and each country report with details of findings and methods are available at www.globalcallcenter.org.

Appendix D
Variables Used in Papers in this Volume

Variable	*Definition*
HR & Work Design Practices	
Compensation	
Annual earnings	The gross annual earnings of the typical full-time core employee before deductions and taxes, including wages, earnings, bonuses, commissions, profit sharing, and overtime pay; but excluding benefits such as pensions and health, and deferred compensation such as stock options. By "typical" we mean that about half the core employees are paid more and about half are paid less. All currencies were converted to U.S. dollars.
Commission pay	Percentage of total annual pay based on individual incentives.
Selection	
Selection rate	Percentage of applicants who get hired.
Selection tests	Percentage of employees selected using systematic selection tests, for example, psychometric, aptitude, work sampling.
Training	
Initial training	No. of training days for call center agents in the first year.
Weeks to become competent	No. of weeks it takes full-time agents to become fully competent in their job.
On-going training	No. of formal training days for experienced agents per year.
Work design	
Flexible job descriptions	Percentage of employees who have flexible job descriptions not linked to specific tasks.
Flexible work arrangements	Percentage of employees with access to flexible working arrangements, such as job sharing, telecommuting, and flexi-time.
Job discretion	A six-item measure concerning the extent to which agents have control over their work tasks and interaction with customers. It is based on items used in previous call center work design studies (Holman 2002; Wood et al., 2006), and gauged on a five-point scale that ranges from "not at all" to "a great deal." The six items covered agents' discretion over the following: daily work tasks; methods or procedures used; speed of work; customer interaction; setting daily lunch and break schedule; and handling additional requests or problems that arise unexpectedly.
Performance monitoring	Performance monitoring is a three-item measure concerning the extent to which agents had their calls monitored and the frequency with which the information gained was fed back to them. It is based on a measure used by Wood et al. (2006). An eight-point scale was used ranging from "never" to "daily." The three items concerned how often employees are given statistical information on their performance (for example, number of calls taken, call length, number of sales); how often supervisors or other staff listen on a regular basis to the calls of experienced employees (those with more than one year of tenure); and how often an experienced employee receives feedback and coaching on telephone technique and service delivery from a supervisor.
Teams: Off-line quality	Percentage of employees currently involved in quality circles or process/product improvement teams.
Teams: Self-managed	Percentage of employees who routinely perform their job as part of a self-managed team.

Continued

Appendix D. ***Continued.***

Variable	*Definition*
Collective Representation	
Union coverage	A dummy variable reflecting whether a center is covered by a union contract.
Union & works councils	Dummy variables representing single or combined presence of union agreement/works council.
Technology	
Automation	Percentage of daily customer calls completed by a Voice Recognition Unit (VRU) or Interactive Voice Response Unit (IVR) and that do not require human interaction.
Customer relationship management	A dummy variable reflecting whether agents use CRM systems that enable agents to talk to the customer while at the same time searching for and assessing records of prior customer contacts, filling in new customer data, and logging information.
Media blending	A dummy variable reflecting whether agents use media blending—a mixture of media to interact with customers including integrated use of e-mail, fax, phone, and electronic chat.
Web-enablement	A dummy variable reflecting whether agents use web-enablement (joint browsing, chat, instant messaging) when interacting with customers.
Workflow management	A dummy variable reflecting whether workflow management systems are used to automate the distribution of calls and the flow of tasks, enable skill-based routing, and facilitate resource planning and staffing.
Work Force Characteristics	
Education level	Four dummy variables representing the typical agent education: no formal qualifications, education up to the age of 16, education up to the age of 18, and university education.
Gender	The percentage of female employees.
No. of employees (establishment size)	The log-transformed total number of full-time equivalent employees (including managers, team leaders, and agents employed on a full-time, part-time, and temporary basis).
Part-time agents	Percentage of agents hired on a part-time basis.
Temporary agents	Percentage of agents hired on a temporary basis either directly or through agencies.
Tenure	Percentage of agents with tenure of less than one year.
Outcomes	
Call abandonment	The log-transformed percentage of calls that are abandoned by the customer before being answered.
Labor costs	The transformed estimate of labor costs as a percentage of total costs.
Dismissal rate	The percentage of employees who were dismissed in the last year.
Quit rate	The log-transformed estimate of the percentage of employees who voluntarily left their job in the previous year (excluding promotions, internal transfers, dismissals, and retirements).
Sales change	The log-transformed estimate of the percentage change in sales in the last two years.

Continued

Appendix D. ***Continued.***

Variable	*Definition*
Organizational Characteristics	
Age	Age of call center in years.
Call type: Inbound	A dummy variable reflecting whether the call center primarily deals with inbound or outbound calls.
Operational requirements	The operational requirements of the call center are measured by assessing relationship building, the extent to which CSRs have repeated interactions with customers. It is assessed on a five-point scale ranging from "never" to "very often."
Ownership: In-house	A dummy variable reflecting whether the call center is in-house or a subcontractor.
Part of larger organization	A dummy variable reflecting whether the call center is part of a larger organization or an independent entity.
Primary activity	A binary variable reflecting whether the call center primarily deals with service or sales calls.
Primary customer segment	A series of dummy variables reflecting the main type of customer segment served: large business customers only, small business customers only, mass market customers only, and all types of customer.
Sector	A dummy variable reflecting the sector served by the call center. The two primary sector variables used were telecommunications and financial services.
Use of government programs	A 5-item measure of whether the call center used one or more of the following: job recruitment and placement services, site location assistance, incentives for locating in targeted zones, tax abatements, and other special loans or grants. The measure was transformed using the natural log.

Appendix E
Means and Standard Deviations of Variables Used in This Volume, by Country (standard deviations in parentheses)

	Coordinated Economies						*Liberal Market Economies*					*Emerging Market Economies*					
Variable	*Austria*	*Denmark*	*France*	*Germany*	*Spain*	*Sweden*	*Canada*	*Ireland*	*Israel*	*U.K.*	*U.S.*	*Brazil*	*India*	*Poland*	*South Africa*	*South Korea*	*Total*
HR & Work Design Practices																	
Compensation																	
Annual Earnings	18,933	42,638	22,122	29,538	16,661	30,528	31,319	30,148	9,713	28,001	30,647	4,616	2,505	7,148	11,736	13,688	24,143
(U.S.$ 2005)	(10,158)	(6,569)	(4,577)	(9,806)	(6,214)	(4,628)	(9,721)	(9,106)	(3,196)	(7,204)	(10,964)	(3,653)	(792)	(3,196)	(5,152)	(4,483)	(12,775)
Commission Pay	16.73	9.74	6.68	14.59	2.07	4.34	6.71	7.17	11.32	3.23	14.01	11.77	16.91	22.07	6.75	18.30	10.81
(% of Total)	(24.34)	(23.09)	(9.93)	(15.49)	(4.88)	(11.17)	(18.96)	(18.14)	(18.52)	(7.60)	(22.67)	(17.11)	(12.25)	(13.18)	(20.29)	(20.53)	(20.44)
Selection																	
Selection Tests	32.56	27.22	57.72	40.38	50.91	18.53	45.50	37.38	76.84	62.07	41.04	73.09	75.44	36.44	60.52		46.59
(% Use)	(45.04)	(39.53)	(47.45)	(46.72)	(44.80)	(34.36)	(47.76)	(47.06)	(40.02)	(45.41)	(46.77)	(41.44)	(38.34)	(43.84)	(46.28)		(47.14)
Selection Rate (%	27.64	23.30	25.22	22.54	36.19	15.64	30.03	29.26	22.91	31.40	27.94	34.41	13.21	21.08	31.17	34.67	28.17
of Apps. Hired)	(26.77)	(23.04)	(14.33)	(25.89)	(31.49)	(20.47)	(26.57)	(21.13)	(23.12)	(22.58)	(23.07)	(23.93)	(12.90)	(18.62)	(24.73)	(20.40)	(23.97)
Training																	
Initial Training	18.50	20.57	24.84	19.59	20.22	24.78	23.65	20.84	18.87	25.00	20.41	26.16	22.47	17.88	23.25	20.04	21.25
(Days)	(17.76)	(18.28)	(20.73)	(21.40)	(15.02)	(22.73)	(20.46)	(15.15)	(16.62)	(16.66)	(17.73)	(22.96)	(19.49)	(14.72)	(19.73)	(20.42)	(19.34)
On-Going Training	8.65	6.04	6.78	10.92	15.53	7.69	8.71	10.13	4.78	8.20	10.20	18.05	13.27	11.30	12.84	15.77	9.65
(Days)	(8.22)	(5.37)	(5.15)	(10.02)	(19.08)	(6.63)	(10.09)	(10.15)	(5.25)	(6.77)	(10.23)	(14.39)	(16.64)	(10.29)	(10.69)	(16.91)	(10.74)
Weeks to Be	11.79	16.78	16.94	16.78	15.68	15.85	21.33	22.42	7.16	25.82	17.77	19.01		8.33	14.31	11.70	16.99
Proficient	(14.26)	(15.05)	(15.21)	(23.71)	(16.50)	(17.86)	(16.24)	(14.82)	(8.55)	(19.04)	(17.03)	(14.16)		(7.30)	(12.80)	(9.04)	(16.57)
Work Design																	
Flexible Job	27.98	25.81	63.45	36.00	15.97	58.02	12.42	17.93		27.02	13.78	11.86	3.94	29.15	9.53	25.83	25.39
Descriptions	(42.52)	(41.59)	(40.55)	(46.26)	(32.10)	(40.87)	(28.70)	(36.18)		(42.17)	(29.35)	(23.51)	(16.18)	(43.19)	(27.34)	(37.33)	(39.28)
Flexible Work	51.47	25.08	25.56	54.14	11.88	49.75	32.57	29.40	18.41	55.21	33.29	12.95	6.69	44.48	29.80	14.44	33.89
Arrangements	(47.05)	(40.20)	(40.37)	(48.37)	(25.16)	(46.17)	(43.93)	(41.01)	(35.99)	(46.74)	(41.93)	(28.39)	(24.55)	(46.95)	(42.25)	(31.44)	(43.73)
Job Discretion	3.09	3.17	2.85	3.22	3.04	3.06	2.50	2.72	2.76	2.58	2.85	2.81	2.04	2.76	3.01	3.17	2.82
	(0.72)	(0.71)	(0.83)	(0.71)	(0.76)	(0.64)	(0.75)	(0.73)	(0.85)	(0.65)	(0.77)	(0.82)	(0.78)	(0.67)	(0.81)	(0.60)	(0.79)
Performance	4.30	4.26	4.88	4.17	4.88	4.56	5.31	4.73	5.09	5.11	5.08	5.90	6.89	5.41	5.67	5.95	5.09
Monitoring	(1.62)	(1.38)	(1.78)	(1.70)	(1.77)	(1.66)	(1.49)	(1.74)	(1.25)	(1.40)	(1.58)	(1.45)	(1.14)	(1.70)	(1.93)	(1.53)	(1.67)
Teams:	35.41	23.20	22.66	34.79	16.71	46.23	45.00	23.50	16.53	20.26	26.15	30.29	8.01	45.50	32.69	23.75	32.09
% Off-Line	(41.02)	(29.70)	(32.00)	(42.51)	(29.64)	(41.71)	(39.46)	(31.92)	(25.94)	(30.33)	(37.71)	(38.16)	(12.18)	(42.19)	(39.24)	(35.73)	(37.71)
Teams:	28.54	29.83	38.97	29.32	26.15	62.45	26.53	23.95	8.04	20.84	15.97	29.25	8.88	28.63	43.18	30.46	27.52
% Self-Directed	(41.18)	(39.89)	(42.25)	(42.90)	(38.73)	(41.66)	(39.15)	(32.77)	(21.30)	(34.88)	(34.25)	(35.13)	(20.03)	(38.82)	(40.49)	(37.31)	(39.23)

Continued

Appendix E. ***Continued.***

	Coordinated Economies						*Liberal Market Economies*					*Emerging Market Economies*					
Variable	*Austria*	*Denmark*	*France*	*Germany*	*Spain*	*Sweden*	*Canada*	*Ireland*	*Israel*	*U.K.*	*U.S.*	*Brazil*	*India*	*Poland*	*South Africa*	*South Korea*	*Total*
Collective Representation																	
Union Present	0.20	0.12	0.08	0.03	0.00	0.52	0.16	0.07	0.04	0.28	0.09	0.42	0.00	0.08	0.23	0.08	0.17
	(0.40)	(0.32)	(0.27)	(0.18)	(0.00)	(0.50)	(0.37)	(0.26)	(0.20)	(0.45)	(0.29)	(0.50)	(0.00)	(0.27)	(0.43)	(0.27)	(0.37)
Works Council Present	0.14	0.11	0.17	0.24	0.00	0.00	0.00	0.28	0.00	0.19	0.00	0.08	0.00	0.05	0.10	0.00	0.08
	(0.34)	(0.31)	(0.38)	(0.43)	(0.00)	(0.00)	(0.00)	(0.45)	(0.00)	(0.39)	(0.00)	(0.27)	(0.00)	(0.23)	(0.30)	(0.00)	(0.27)
Union & Works Council Present	0.36	0.39	0.62	0.22	1.00	0.48	0.00	0.28	0.03	0.18	0.00	0.29	0.00	0.00	0.02	0.00	0.18)
	(0.48)	(0.49)	(0.49)	(0.42)	(0.00)	(0.50)	(0.00)	(0.45)	(0.16)	(0.39)	(0.00)	(0.46)	(0.00)	(0.00)	(0.13)	(0.00)	(0.39)
Technology																	
Call Automation	1.71	4.48	8.29	1.29	3.11	10.01	8.35	4.11	4.19	6.66	10.44	15.55	51.49	15.55	4.58	41.45	10.34
	(9.49)	(13.42)	(23.67)	(6.49)	(10.89)	(22.61)	(19.36)	(14.10)	(15.07)	(18.42)	(22.15)	(27.41)	(40.63)	(25.57)	(10.92)	(42.39)	(23.82)
Cust. Relationship Management	0.45	0.35	0.56	0.51	0.47	0.07	0.27	0.22	0.48	0.28	0.37	0.59	0.57	0.40	0.23	0.27	0.38
	(0.50)	(0.48)	(0.50)	(0.50)	(0.50)	(0.25)	(0.45)	(0.42)	(0.50)	(0.45)	(0.48)	(0.49)	(0.50)	(0.49)	(0.43)	(0.45)	(0.48)
E-Mail	0.82	0.84	0.68	0.89	0.91	0.96	0.73	0.74	0.51	0.63	0.85	0.72	0.52	0.89	0.73	0.73	0.78
	(0.38)	(0.37)	(0.47)	(0.32)	(0.29)	(0.21)	(0.44)	(0.44)	(0.50)	(0.48)	(0.36)	(0.45)	(0.50)	(0.31)	(0.45)	(0.45)	(0.42)
Fax	0.75	0.61	0.72	0.86	0.87	0.87	0.76	0.77	0.78	0.62	0.91	0.67	0.09	0.83	0.73	0.75	0.77
	(0.44)	(0.49)	(0.45)	(0.35)	(0.34)	(0.34)	(0.43)	(0.43)	(0.41)	(0.49)	(0.29)	(0.47)	(0.29)	(0.38)	(0.45)	(0.44)	(0.42)
Media Blending	0.25	0.05		0.27	0.82	0.04	0.11			0.09		0.54	0.00	0.24	0.04	0.27	0.21
	(0.44)	(0.23)		(0.44)	(0.38)	(0.21)	(0.32)			(0.29)		(0.50)	(0.00)	(0.43)	(0.20)	(0.45)	(0.41)
Voice Recognition	0.08	0.01	0.15	0.08	0.38	0.02	0.08	0.14	0.03	0.07		0.10	0.09	0.13	0.00	0.09	0.09
	(0.28)	(0.10)	(0.36)	(0.28)	(0.49)	(0.15)	(0.27)	(0.35)	(0.16)	(0.26)		(0.30)	(0.29)	(0.34)	(0.00)	(0.28)	(0.29)
Web-Enablement	0.22	0.13	0.24	0.30	0.13	0.11	0.38	0.17	0.25	0.23	0.56	0.62	0.30	0.36	0.15	0.39	0.34
	(0.42)	(0.34)	(0.43)	(0.46)	(0.34)	(0.31)	(0.49)	(0.38)	(0.44)	(0.42)	(0.50)	(0.49)	(0.47)	(0.48)	(0.37)	(0.49)	(0.48)
Workflow Management	0.41	0.12	0.25	0.43	0.19	0.04	0.36	0.26	0.45	0.33		0.52	0.09	0.37	0.12	0.88	0.35
	(0.49)	(0.32)	(0.44)	(0.50)	(0.40)	(0.21)	(0.48)	(0.45)	(0.50)	(0.47)		(0.50)	(0.29)	(0.49)	(0.33)	(0.32)	(0.48)
Call Center Outcomes																	
Average Call Time (Median)	160	150	180	180	195	180	240	182	180	186	240	187	300	180	180	150	195
	(191)	(114)	(133)	(124)	(165)	(132)	(185)	(133)	(148)	(145)	(179)	(101)	(249)	(129)	(145)	(70)	(163)
Call Abandon Rate	6.71	6.36	6.10	6.53	3.46	6.29	4.47	5.82	6.64	5.33	4.12	4.56	2.56	5.62	5.29	7.89	5.86
	(6.45)	(7.65)	(4.00)	(5.55)	(2.74)	(5.86)	(4.72)	(5.34)	(7.53)	(6.29)	(5.66)	(4.38)	(2.53)	(5.34)	(5.23)	(10.70)	(8.07)
Dismissal Rate	1.20	5.01	1.94	5.46	1.68	3.31	6.09	3.91	8.40	3.13	8.46	12.40	4.30	5.58	4.68	3.13	5.93
	(2.39)	(9.12)	(4.35)	(10.40)	(4.92)	(9.47)	(9.32)	(9.38)	(9.46)	(4.73)	(10.90)	(15.78)	(4.75)	(9.97)	(12.12)	(6.58)	(10.00)
Labor Costs (% of Total)	71.49	70.56	71.77	72.11	73.84	61.80	68.19	65.16	75.09	67.27	60.89	47.14	42.00	60.34	59.53	68.83	65.40
	(15.86)	(20.15)	(8.15)	(15.65)	(16.80)	(21.22)	(20.42)	(19.48)	(18.88)	(22.47)	(22.91)	(24.86)	(10.71)	(18.53)	(24.20)	(20.64)	(20.91)

Continued

Appendix E. *Continued.*

	Coordinated Economies						Liberal Market Economies					Emerging Market Economies					
Variable	*Austria*	*Denmark*	*France*	*Germany*	*Spain*	*Sweden*	*Canada*	*Ireland*	*Israel*	*U.K.*	*U.S.*	*Brazil*	*India*	*Poland*	*South Africa*	*South Korea*	*Total*
Quit Rate (% / Yr.)	3.85	8.88	9.60	5.10	15.38	5.61	14.14	17.80	12.33	15.39	12.88	9.10	23.31	9.62	10.41	18.11	11.71
	(7.12)	(12.15)	(11.60)	(9.72)	(21.29)	(8.65)	(18.44)	(21.11)	(12.87)	(14.28)	(14.48)	(10.78)	(14.52)	(14.21)	(15.85)	(21.52)	(15.21)
Sales Change (%)	12.00	36.23	17.97	25.24	21.47	19.53	16.90	28.50	9.46	21.24	10.89	45.91	178.0	75.92	26.00	10.69	22.51
	(32.11)	(62.13)	(34.42)	(66.69)	(35.91)	(56.32)	(47.27)	(48.17)	(15.40)	(39.56)	(24.70)	(64.93)	(137.7)	(115.3)	(40.66)	(33.46)	(54.03)
Work Force Characteristics																	
Agent Education (Typical Worker in Call Center)																	
Education: To Age 16	0.76	0.11	0.05	0.80	0.12	0.06	0.03	0.37	0.36	0.44	0.39	0.78	0.00	0.00	0.88	0.14	0.32
	(0.43)	(0.31)	(0.22)	(0.40)	(0.32)	(0.23)	(0.18)	(0.49)	(0.48)	(0.50)	(0.49)	(0.42)	(0.00)	(0.00)	(0.33)	(0.35)	(0.47)
Education: To Age 18	0.13	0.81	0.29	0.20	0.53	0.65	0.83	0.23	0.53	0.29	0.40	0.22	0.28	0.75	0.11	0.68	0.45
	(0.33)	(0.39)	(0.46)	(0.40)	(0.50)	(0.48)	(0.37)	(0.43)	(0.50)	(0.45)	(0.49)	(0.42)	(0.45)	(0.44)	(0.31)	(0.47)	(0.50)
Education: University	0.11	0.08	0.66	0.01	0.35	0.29	0.13	0.40	0.11	0.28	0.21	0.00	0.72	0.25	0.02	0.18	0.23
	(0.32)	(0.27)	(0.48)	(0.08)	(0.48)	(0.45)	(0.34)	(0.49)	(0.32)	(0.45)	(0.41)	(0.00)	(0.45)	(0.44)	(0.13)	(0.39)	(0.42)
Female: %	75.96	68.20	70.99	73.83	76.20	71.31	69.19	66.14	74.57	68.04	65.67	76.23	46.93	59.44	60.59	90.81	69.19
	(19.41)	(20.57)	(22.69)	(22.01)	(18.21)	(20.36)	(22.17)	(24.24)	(23.19)	(17.38)	(24.33)	(15.54)	(16.31)	(27.71)	(22.51)	(21.33)	(23.35)
Part-Time: %	28.68	21.07	7.48	24.69	8.41	16.68	20.11	7.29	48.16	16.63	13.11	20.13	2.02	1.74	8.38	2.47	17.40
	(33.84)	(27.76)	(17.94)	(26.96)	(17.98)	(24.86)	(26.67)	(16.95)	(45.25)	(20.12)	(26.61)	(34.77)	(6.36)	(6.11)	(18.39)	(7.93)	(28.21)
Temps. %	2.86	8.00	20.00	17.07	44.57	16.85	7.31	10.89	0.00	12.10	7.24	12.52	0.00	27.66	3.85	61.44	12.10
	(9.98)	(13.86)	(28.29)	(24.62)	(38.49)	(25.36)	(15.55)	(22.94)	(0.00)	(23.58)	(21.28)	(21.01)	(0.00)	(34.17)	(10.87)	(41.93)	(25.81)
Tenure (% < 1 Yr)	10.22	30.74	23.51	27.25	37.25	6.98	27.85	33.86	29.17	29.90	24.69	38.26	57.49	43.21	22.97	38.29	28.24
	(14.71)	(29.68)	(21.23)	(28.62)	(31.94)	(20.96)	(26.33)	(26.17)	(24.19)	(23.00)	(22.46)	(28.07)	(23.59)	(33.05)	(23.29)	(28.11)	(26.41)
Organizational and Market Characteristics																	
Age of Center (Mean)	9.99	9.09	9.98	7.97	6.96	11.01	11.13	9.40	10.65	9.09	16.81	6.71	4.97	5.37	8.03	5.50	10.33
	(9.25)	(9.48)	(6.52)	(5.54)	(5.10)	(8.29)	(9.41)	(7.55)	(11.95)	(8.37)	(13.37)	(5.72)	(2.19)	(2.88)	(4.92)	(3.89)	(9.74)
Age of Center (Median)	7.00	6.00	8.00	6.00	6.00	9.00	8.00	9.00	8.00	7.00	12.00	6.00	4.00	5.00	7.00	5.00	7.00
Gov't Program Use: Ave. No.	1.78	1.38	1.65	1.72	2.07	1.75	1.64	2.09	1.35	1.82	1.41	1.51		1.65	2.04	1.36	1.66
	(0.54)	(0.58)	(0.70)	(0.58)	(0.95)	(0.57)	(0.59)	(0.92)	(0.44)	(0.68)		(0.54)		(0.41)	(0.93)	(0.76)	(0.66)
Inbound Centers (%)	0.61	0.81	0.80	0.67	0.82	0.81	0.76	0.88	0.79	0.86	0.85	0.62	0.45	0.60	0.78	0.88	0.79
	(0.49)	(0.39)	(0.40)	(0.47)	(0.38)	(0.39)	(0.43)	(0.32)	(0.41)	(0.35)	(0.36)	(0.49)	(0.50)	(0.49)	(0.42)	(0.33)	(0.42)
In-House Centers (%)	0.63	0.73	0.71	0.33	0.50	0.76	0.53	0.81	0.88	0.73	0.86	0.47	0.20	0.57	0.80	0.72	0.67
	(0.49)	(0.45)	(0.45)	(0.47)	(0.50)	(0.43)	(0.50)	(0.39)	(0.33)	(0.45)	(0.35)	(0.50)	(0.40)	(0.50)	(0.41)	(0.45)	(0.47)
Managers: % of Work Force (Mean)	14.94	12.47	14.20	14.62	13.89	14.25	11.59	15.63	15.79	15.64	14.31	9.45	8.79	19.69	16.42	11.59	13.59
	(12.50)	(11.11)	(12.82)	(11.04)	(9.24)	(13.04)	(10.00)	(14.29)	(14.29)	(13.84)	(10.00)	(6.98)	(8.47)	(15.33)	(14.09)	(9.97)	(11.11)

Continued

Appendix E. *Continued.*

Variable	*Coordinated Economies*						*Liberal Market Economies*					*Emerging Market Economies*					
	Austria	*Denmark*	*France*	*Germany*	*Spain*	*Sweden*	*Canada*	*Ireland*	*Israel*	*U.K.*	*U.S.*	*Brazil*	*India*	*Poland*	*South Africa*	*South Korea*	*Total*
Managers: % of Work Force (Median)	13.03	6.09	6.22	10.97	14.83	8.38	8.85	6.75	8.40	9.37	12.48	7.88	4.33	13.78	10.48	10.05	10.19
Operational Requirements	2.75 (1.16)	3.00 (0.89)	2.50 (1.03)	2.85 (1.05)	3.06 (0.94)	3.21 (0.95)	3.03 (1.13)	3.21 (0.89)	2.94 (1.17)	3.01 (1.01)	2.71 (1.31)	3.23 (0.91)	2.98 (1.12)	3.49 (0.98)	3.56 (1.10)	2.81 (1.09)	2.94 (1.12)
Part of Larger Organization	0.86 (0.34)	0.86 (0.34)	0.76 (0.43)	0.73 (0.44)	0.82 (0.38)	0.74 (0.44)	0.81 (0.39)	0.98 (0.15)	0.96 (0.19)	0.87 (0.33)	0.80 (0.40)	0.66 (0.48)	0.32 (0.47)	0.79 (0.41)	0.41 (0.50)	0.87 (0.34)	0.76 (0.43)
Primary Activity	0.42 (0.50)	0.41 (0.49)	0.46 (0.50)	0.49 (0.50)	0.37 (0.49)	0.45 (0.50)	0.44 (0.50)	0.53 (0.50)	0.48 (0.50)	0.62 (0.49)	0.46 (0.50)	0.32 (0.47)	0.15 (0.36)	0.39 (0.49)	0.53 (0.50)	0.70 (0.46)	0.44 (0.50)
Primary Mkt.: Large Business	0.17 (0.37)	0.13 (0.33)	0.16 (0.37)	0.29 (0.45)	0.19 (0.40)	0.24 (0.43)	0.20 (0.40)	0.16 (0.37)	0.11 (0.32)	0.18 (0.39)	0.23 (0.42)	0.24 (0.43)	0.17 (0.38)	0.12 (0.33)	0.17 (0.38)	0.02 (0.13)	0.18 (0.39)
Primary Mkt.: Mass	0.49 (0.50)	0.37 (0.49)	0.52 (0.50)	0.33 (0.47)	0.32 (0.47)	0.41 (0.49)	0.43 (0.50)	0.42 (0.50)	0.36 (0.48)	0.47 (0.50)	0.39 (0.49)	0.39 (0.49)	0.50 (0.50)	0.23 (0.42)	0.41 (0.50)	0.77 (0.42)	0.42 (0.49)
Primary Mkt.: Local-Regional	0.34 (0.48)	0.25 (0.43)	0.30 (0.46)	0.28 (0.45)	0.18 (0.38)	0.17 (0.38)	0.26 (0.44)	0.23 (0.43)	0.11 (0.32)	0.30 (0.46)	0.48 (0.50)	0.33 (0.47)	0.27 (0.45)	0.16 (0.37)	0.19 (0.40)	0.23 (0.42)	0.30 (0.46)
Primary Mkt.: National	0.51 (0.50)	0.72 (0.45)	0.60 (0.49)	0.59 (0.49)	0.68 (0.47)	0.73 (0.44)	0.38 (0.49)	0.40 (0.49)	0.81 (0.39)	0.57 (0.50)	0.50 (0.50)	0.64 (0.48)	0.00 (0.00)	0.80 (0.40)	0.72 (0.45)	0.76 (0.43)	0.56 (0.50)
Primary Mkt.: International	0.15 (0.35)	0.03 (0.18)	0.10 (0.31)	0.14 (0.35)	0.15 (0.36)	0.09 (0.29)	0.35 (0.48)	0.37 (0.49)	0.08 (0.27)	0.13 (0.34)	0.01 (0.12)	0.03 (0.16)	0.73 (0.45)	0.04 (0.20)	0.09 (0.28)	0.01 (0.09)	0.14 (0.35)
Sector: Financial Services	0.14 (0.34)	0.19 (0.39)	0.32 (0.47)	0.20 (0.40)	0.16 (0.37)	0.19 (0.40)	0.18 (0.38)	0.19 (0.39)	0.16 (0.37)	0.21 (0.41)	0.20 (0.40)	0.25 (0.44)	0.43 (0.50)	0.33 (0.47)	0.31 (0.47)	0.36 (0.48)	0.22 (0.42)
Sector: Telecom.	0.19 (0.39)	0.19 (0.40)	0.28 (0.45)	0.31 (0.46)	0.41 (0.50)	0.19 (0.40)	0.19 (0.40)	0.16 (0.37)	0.35 (0.48)	0.10 (0.30)	0.53 (0.50)	0.30 (0.46)	0.30 (0.46)	0.32 (0.47)	0.28 (0.45)	0.26 (0.44)	0.29 (0.45)
Size: No. Employees (Mean)	84 (139)	61 (94)	74 (103)	141 (406)	202 (269)	51 (85)	184 (302)	80 (131)	47 (39)	157 (233)	205 (524)	590 (1,072)	569 (920)	125 (365)	87 (186)	185 (433)	192 (656)
Size: No. Employees (Median)	39	27	38	38	99	17	67	27	36	73	72	144	216	29	36	53	50
Sample Size	96	118	210	153	68	139	387	43	80	167	464	114	60	75	64	121	2,359

REFERENCES

Amable, Bruno. 2003. *The Diversity of Modern Capitalism.* Oxford: Oxford University Press.

Arzbächer, Sandra, Ursula Holtgrewe, and Christian Kerst. 2002. "Call Centres: Constructing Flexibility." In Ursula Holtgrewe, Christian Kerst, and Karen Shire, eds., *Re-Organizing Service Work: Call Centres in Germany and Britain,* pp. 19–41. Aldershot: Ashgate.

Bain, Peter, and Phil Taylor. 2008. "No Passage to India? Initial Responses of UK Trade Unions to Call Center Offshoring." *Industrial Relations Journal,* Vol. 39, No. 1, pp. 5–23.

Batt, Rosemary. 2000. "Strategic Segmentation and Frontline Services: Matching Customers, Employees, and Human Resource Systems." *International Journal of Human Resource Management,* Vol. 11, No. 3, pp. 540–61.

____. 2001. "Explaining Intra-Occupational Wage Inequality in Telecommunications Services: Customer Segmentation, Human Resource Practices, and Union Decline." *Industrial and Labor Relations Review,* Vol. 54, No. 2A, pp. 425–49.

____. 2002. "Managing Customer Services: Human Resource Practices, Quit Rates, and Sales Growth." *Academy of Management Journal,* Vol. 45, No. 3, pp. 587–97.

Batt, Rosemary, Virginia Doellgast, and Hyunji Kwon. 2006. "Service Management and Employment Systems in U.S. and Indian Call Centers." In Susan M. Collins and Lael Brainard, eds., *Brookings Trade Forum 2005: Offshoring White-Collar Work—The Issues and Implications,* pp. 335–72. Washington, D.C.: Brookings Institution Press.

Batt, Rosemary, Larry Hunter, and Steffanie Wilk. 2003. "How and When Does Management Matter? Job Quality and Career Opportunities for Call Center Workers." In Eileen Appelbaum, Annette Bernhardt, and Richard Murnane, eds., *The Labor Market for Low Wage Workers.* New York: Russell Sage Foundation.

Berger, Suzanne, and Ronald Dore. 1996. *National Diversity and Global Capitalism.* Ithaca: Cornell University Press.

Biggart, Nicole, and Mauro Guillén. 2002. "Developing Difference: Social Organization and the Rise of the Auto Industries of South Korea, Taiwan, Spain, and Argentina." In Nicole Biggart, ed., *Readings in Economic Sociology,* pp. 231–61. Malden, Mass.: Oxford University Press.

Blinder, Alan. 2006. "Off-Shoring: The Next Industrial Revolution." *Foreign Affairs,* March/April, pp. 113–28.

Bosch, Gerhard, and Steffen Lehndorff. 2005. *Working in the Service Sector: A Tale from Different Worlds.* Abingdon: Routledge.

Bosch, Gerhard, and Claudia Weinkopf. 2008. *Low Wage Work in Germany.* New York: Russell Sage Foundation.

Boyer, Robert. 1997. "French Statism at the Crossroads." In Colin Crouch and Wolfgang Streeck, eds., *Political Economy of Modern Capitalism,* pp. 71–101. London: Sage.

Callcentres.net. 2007. "The Asian Contact Center Industry Benchmarking Report." http://callcentres.net/callcentres/Live/me.get?SITE.HOME.

____. 2008. "The Asian Contact Center Industry Benchmarking Report." http://callcentres.net/callcentres/Live/me.get?SITE.HOME.

Calmfors, Lars, and John Driffil. 2002. "Centralization of Wage Bargaining" In *The Economics of Labor Unions,* Vol. 2, pp. 353–97. International Library of Critical Writings in Economics, Vol. 147. Cheltenham, U.K., and Northampton, Mass.: Elgar.

Caroli, Eve, and Jerome Gautie, eds. 2008. *Low Wage Work in France.* New York: Russell Sage Foundation.

Cohen, Yinon, Yitchak Haberfeld, Guy Mundlak, and Ishak Saporta. 2003. "Unpacking Union Density: Membership and Coverage in the Transformation of the Israeli IR System." *Industrial Relations,* Vol. 42, No. 4, pp. 692–712.

Crouch, Colin. 2005. *Capitalist Diversity and Change: Recombinant Governance and Institutional Entrepreneurs.* Oxford and New York: Oxford University Press.

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.

Crouch, Colin, and Wolfgang Streeck. 1997. *Political Economy of Modern Capitalism: Mapping Convergence and Diversity.* London: Sage.

Datamonitor. 2001. "U.S. Customer Relationship Outsourcing to 2005." London: Datamonitor.

____. 2003. "Opportunities in North American Call Center Markets to 2007." New York: Datamonitor.

____. 2004. "The Vertical Guide to Contact Centers in North America: Tracking Sector Needs in a Mature Market." New York: Datamonitor.

Deery, Stephen, Richard Iverson, and Janet Walsh. 2002. "Work Relationships in Telephone Call Centers: Understanding Emotional Exhaustion and Employee Withdrawal." *Journal of Management Studies,* Vol. 39, No. 4, pp. 471–97.

Deery, Stephen, and Nicholas Kinnie, eds. 2004. *Call Centres and Human Resource Management.* Houndmills, N.Y.: Palgrave.

de Grip, Andries, Inge Sieben, and Danielle van Jaarsveld. 2006. "De callcenterbranche in de Nederlandse arbeidsmarkt en arbeidsverhoudingen" ["Labor Markets and Labor Relations in Dutch Call Centers"]. *Tijdschrift voor Arbeidsvraagstukken,* Vol. 22, pp. 71–83.

Djelic, Marie-Laure, and Sigrid Quack. 2003. "Theoretical Building Blocks for a Research Agenda Linking Globalization and Institutions." In Marie-Laure Djelic and Sigrid Quack, eds., *Globalization and Institutions: Redefining the Rules of the Economic Game.* Cheltenham, U.K., and Northampton, Mass.: Elgar, pp. 15–34.

Doellgast, Virginia. 2008. "Collective Bargaining and High-Involvement Management in Comparative Perspective: Evidence from German and U.S. Call Centers." *Industrial Relations,* Vol. 47, No. 2, pp. 284–319.

Doellgast, Virginia, Rosemary Batt, and Ole Sørensen. 2009. "Industrial Relations in European Call Centers: A Symposium on Collective Bargaining in New Service Workplaces." *European Journal of Industrial Relations,* forthcoming.

Doellgast, Virginia, and Ian Greer. 2007. "Vertical Disintegration and the Disorganization of German

Industrial Relations." *British Journal of Industrial Relations,* Vol. 45, No. 1, pp. 55–76.

Doeringer, Peter, and Michael Piore. 1971. *Internal Labor Markets and Manpower Analysis.* Lexington, Mass: D.C. Heath.

Dossani, Rafiq, and Martin Kenney. 2003. "Went for Cost, Stayed for Quality?: Moving the Back Office to India." Berkeley Roundtable on the International Economy. Berkeley: University of California Press.

Dunkel, Wolfgang, and Annika Schönauer. 2008. "Reorganising the Front Line: Customer Service in the Public Sector." In Jörg Flecker et al. (q.v.), pp. 107–36.

Ebbinghaus, Bernhard, and Jelle Visser. 2000. *The Societies of Europe: Trade Unions in Western Europe since 1945.* McMillan: London.

Everest Research Institute. 2008. "Trends in the Offshore Contact Center Services Market. Global Sourcing Market Update." Dallas, Tex.: Everest Global, Inc. February.

Flecker, Jörg. 2007. "Network Economy or Just a New Breed of Multinationals? Relocation of eWork as a Window to the Restructuring of Value Chains." *Work Organization, Labour and Globalization,* Vol. 1, No. 2, pp. 36–51.

Flecker, Jörg, Ursula Holtgrewe, Annika Schönauer, Wolfgang Dunkel, and Pamela Meil. 2008. "Restructuring across Value Chains and Changes in Work and Employment. Case Study Evidence from the Clothing, Food, IT and the Public Sector." Leuven: Higher Institute for Labour Studies, http://www.worksproject.be/documents/D10.1.pdf.

Frenkel, Stephen J., Marek Korczynski, Karen Shire, and May Tam. 1999. *On the Front-Line: Organization of Work in the Information Economy.* Ithaca, N.Y.: ILR Press (an imprint of Cornell University Press).

Frost, Ann, and Dan Campbell. 1997. "Sprint—la Conexion Familiar." Case 9-97-C001 and 9-97-C992. Richard Ivey School of Business, University of Western Ontario.

Gereffi, Gary, and Miguel Korzeniewicz, eds. 1994. *Commodity Chains and Global Capitalism.* Westport, Conn.: Praeger.

Gerhart, Barry, Patrick M. Wright, Gary McMahan, and Scott Snell. 2000. "Measurement Error in Research on Human Resources and Firm Performance: How Much Error Is There and How Does It Influence Size Estimates?" *Personnel Psychology,* Vol. 53, pp. 803–34.

Hacker, Jacob. 2005. "Policy Drift: The Hidden Politics of U.S. Welfare State Retrenchment." In Wolfgang Streeck and Kathleen Thelen, eds., *Beyond Continuity: Institutional Change in Advanced Political Economies.* Oxford: Oxford University Press, pp. 40–82.

Hall, Peter, and Daniel Gingerich. 2004. "Varieties of Capitalism and Institutional Complementarities in the Macroeconomy: An Empirical Analysis." Discussion paper, Max-Plank-Institut für Gesellschaftforschung. Berlin.

Hall, Peter, and David Soskice. 2001. "An Introduction to Varieties of Capitalism." In David Soskice, ed., *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage.* New York: Oxford University Press, pp. 1–70.

Herrigel, Gary. 2005. "Institutionalists at the Limits of Institutionalism: A Constructivist Critique of Two Edited Volumes from Wolfgang Streeck and Kozo Yamamura." *Socio-Economic Review,* Vol. 3, No. 3, pp. 559–67.

Hollingsworth, J. Rogers, Wolfgang Streeck, and Philippe Schmitter. 1994. *Governing Capitalist Economies: Performance and Control of Economic Sectors.* Oxford and New York: Oxford University Press.

Holman, David. 2002. "Employee Well-Being in Call Centers." *Human Resource Management Journal,* Vol. 12, No. 4, pp. 35–50.

Holman, David, Rosemary Batt, and Ursula Holtgrewe. 2007. "The Global Call Center Report: International Perspectives on Management and Employment: A Report of the Global Call Center Research Network." Ithaca, N.Y: Cornell University. www.globalcallcenter.org.

Holman, David, Claire Chissick, and Peter Totterdell. 2002. "The Effects of Performance Monitoring on Emotional Labor and Well-Being in Call Centers." *Motivation and Emotion,* Vol. 26, No. 1, pp. 57–81.

Holst, Hajo. 2008. "The Political Economy of Trade Union Strategies in Austria and Germany: The Case of Call Centers." *European Journal of Industrial Relations,* Vol. 14, No. 1, pp. 25–45.

Holtgrewe, Ursula, Christian Kerst, and Karen Shire. 2002. *Re-Organising Service Work: Call Centers in Germany and Britain.* Aldershot: Ashgate.

Houlihan, Maeve. 2002. "Tensions and Variations in Call Centre Management Strategies." *Human Resource Management Journal,* Vol. 12, No. 4, pp. 67–85.

Houseman, Susan. 2001. "Why Employers Use Flexible Staffing Arrangements: Evidence from an Employer Survey." *Industrial and Labor Relations Review,* Vol. 55, No. 1, pp. 149–70.

Huws, Ursula. 2003. "When Work Takes Flight: Research Results from the EMERGENCE Project." Institute for Employment Studies report 397, Brighton.

Jackson, Gregory, and Richard Deeg. 2006. "How Many Varieties of Capitalism?: Comparing the Comparative Institutional Analyses of Capitalist Diversity." MPIfG Discussion Paper 06/2, Max-Planck-Institut für Gesellschaftsforschung, Köln.

Katz, Harry. 1997. *Telecommunications: Restructuring of Work and Employment Relations Worldwide.* Ithaca, N.Y.: ILR Press (an imprint of Cornell University Press).

Katz, Harry, and Owen Darbishire. 2000. *Converging Divergences: Worldwide Changes in Employment Systems.* Ithaca, N.Y.: ILR Press (an imprint of Cornell University Press).

Kerr, Clark, John Dunlop, Frederick Harbison, and Charles Myers. 1964. *Industrialism and Industrial Man.* New York: Oxford University Press.

Kuruvilla, Sarosh, and Aruna Ranganathan. 2009. "Economic Development Strategies and Macro and Micro Level Human Resource Policies: The Case of India's 'Outsourcing' Industry." *Industrial and Labor Relations Review,* Vol. 62, No. 1, pp. 39–72.

Kwon, Hyunji. 2008. "The Search for Flexibility: Internal Labor Markets, Non-Standard Work, and Gender Segregation in Korean Banking." Ph.D. diss., ILR School, Cornell University. January.

Lloyd, Caroline, Claudia Weinkopf, and Rosemary Batt. 2009. "Restructuring Customer Service: Labor Market Institutions and Call Center Workers in Europe and the

United States." In Gerhard Bosch, Jérome Gautie, Geoff Mason, Ken Mayhew, Wiemer Salverda, John Schmitt, and Niels Westergaard-Nielsen, eds., *Low Wages in a Wealthy World.* New York: Russell Sage Foundation.

Locke, Richard, Thomas Kochan, and Michael Piore. 1995. *Employment Relations in a Changing World.* Cambridge, Mass.: MIT Press.

Maurice, Mark, François Seller, and Jean-Jacques Silvestre. 1986. *The Social Foundations of Industrial Power.* Cambridge, Mass.: MIT Press.

NASSCOM (National Association of Software and Services Companies). 2008. "Indian IT-BPO Industry Factsheet." http://www.nasscom.in/Nasscom/templates/NormalPage.aspx?id=53615 (download September 30, 2008).

OECD. 2004. "Wage Setting Institutions and Outcomes." *OECD Employment Outlook,* Chap. 3, pp. 128–77. Paris: OECD.

Orru, Marco, Nicole Biggart, and Gary Hamilton. 1997. *The Economic Organization of East Asian Capitalism.* Thousand Oaks, Calif.: Sage.

Osterman, Paul. 1994. "How Common Is Workplace Transformation and Who Adopts it?" *Industrial and Labor Relations Review,* Vol. 47, No. 2, pp. 173–88.

Patterson, William, and Simon Green, eds. 2005. *Governance in Contemporary Germany: The Semisovereign State Revisited.* Cambridge: Cambridge University Press.

Poster, Winifred R. 2007. "Who's on the Line? Indian Call Center Agents Pose as Americans for U.S.-Outsourced Firms." *Industrial Relations,* Vol. 46, No. 2, pp. 271–304.

Regini, Mario, Jim Kitay, and Martin Baethge, eds. 1999. *From Tellers to Sellers: Changing Employment Relations in Banks.* Cambridge, Mass: MIT Press.

Rubery, Jill, and Damian Grimshaw. 2003. *The Organization of Employment: An International Perspective.* Houndmills, N.J.: Palgrave.

Schlickler, Eric. 2001. *Disjointed Pluralism: Institutional Innovation and the Development of the U.S. Congress.* Princeton, N.J.: Princeton University Press.

Shire, Karen, Ursula Holtgrewe, and Christian Kerst. 2002. "Re-Organising Customer Service Work: An Introduction." In Ursula Holtgrewe, Christian Kerst, and Karen Shire, eds., *Re-Organising Service Work: Call Centers in Germany and Britain,* pp. 1–16. Aldershot: Ashgate.

Sieben, Inge, and Andries de Grip. 2004. "Training and Expectations on Job Mobility in the Call Centres Sector." *Journal of European Industrial Training,* Vol. 28, pp. 257–71.

Skarlicki, Daniel, Danielle van Jaarsveld, and David Walker. 2008. "Getting Even for Customer Mistreatment: The Role of Moral Identity in the Relationship between Customer Interpersonal Injustice and 'Employee Sabotage." *Journal of Applied Psychology,* Vol. 93, No. 6, pp. 1335–47.

Sørensen, Ole. 2008. "Pay and Job Quality in Danish Call Centres." In Niels Westergaard-Nielsen, ed., *Low Wage Work in Denmark.* New York: Russell Sage Foundation.

Streeck, Wolfgang. 1991. "On the Institutional Conditions of Diversified Quality Production." In Egon Matzner and Wolfgang Streeck, eds., *Beyond Keynesianism: The Socio-Economics of Production and Full Employment,* pp. 21–61. Aldershot: Edward Elgar.

Streeck, Wolfgang, and Kathleen Thelen. 2005. *Beyond Continuity: Institutional Change in Advanced Political Economies.* Oxford: Oxford University Press.

Thelen, Kathleen. 1991. *Union of Parts: Labor Politics in Postwar Germany.* Ithaca, N.Y.: Cornell University Press.

____. 2002. "How Institutions Evolve: Insights from Comparative-Historical Analysis." In James Mahoney and Dietrich Rueschemeyer, eds., *Comparative Historical Analysis in the Social Sciences.* New York: Cambridge University Press.

____. 2005. *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan.* Cambridge: Cambridge University Press.

Turner, Lowell. 1991. *Democracy at Work: Changing World Markets and the Future of Labor Unions.* Ithaca, N.Y.: Cornell University Press.

van Jaarsveld, Danielle D., Ann C. Frost, and David D. Walker. 2007. *The Canadian Contact Centre Industry: Strategy, Work Organization and Human Resource Management.* Vancouver: University of British Columbia. Available at www.gccproject-canada.com.

Waddington, Jeremy, ed. 2005. *Restructuring Representation: The Merger Process and Trade Union Structural Development in Ten Countries.* Frankfurt/Main: Peter Lang.

Westergaard-Nielsen, Niels. 2008. *Low-Wage Work in Denmark.* New York: Russell Sage Foundation.

Whitley, Richard. 1999. *Divergent Capitalisms: The Social Structuring and Change of Business Systems.* Oxford: Oxford University Press.

Wood, Stephen, David Holman, and Christopher Stride. 2006. "Human Resource Management in UK Call Centres." *British Journal of Industrial Relations,* Vol. 44, No. 1, pp. 99–122.

Yamamura, Kozo, and Wolfgang Streeck. 2003. *The End of Diversity? Prospects for German and Japanese Capitalism.* Ithaca, N.Y.: Cornell University Press.