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This paper integrates the study of contextual influences on job autonomy as a key workplace practice with the growing literature on intra-country variation (ICV) versus between-country variation (BCV) in international HRM. While contexts such as industry or country are widely recognized to affect workplace practices such as job autonomy, the influences of different extra-organizational contexts are seldom examined simultaneously or their relative influence systematically compared. Similarly, while much research considers the importance of BCV vis-à-vis ICV in international HRM, little attention is paid to variation that occurs between sub-national or supranational contexts. To move forward on both these counts, we use multilevel analysis and empirically assess the comparative importance of industry as a sub-national context and politico-institutional clusters as a supranational context in addition to country context as sources of differences in job autonomy. Results indicate that inter-cluster variation can be substantially larger than inter-country variation, but that inter-industry dissimilarities tend to exceed both inter-cluster and inter-country dissimilarities. Hence, the main finding of our analysis is that dissimilarities in job autonomy associated with crossing country borders are not exceptionally large as employers and employees face larger dissimilarities in job autonomy when they move across industries. Implications of this finding both for international HRM and for international business and cross-cultural management more broadly are discussed.

Introduction

We consider differences in workplace practices, specifically job autonomy, across four hierarchical units of analysis, namely individuals (L1) that are nested in industries (L2) that are nested in countries (L3) that are nested in supranational clusters (L4). The backdrop to this analysis is a combination of two areas of research. The first of these concerns context as a source of differences in workplace practices such as job autonomy (Jackson, Schuler and Rivero 1989; Gooderham, Nordhaug and Ringdal 1999; Aycan et al. 2000; Von Glinow, Drost and Teagarden 2002). The second of these concerns the importance of within- or intra-country variation (ICV) vis-à-vis inter- or between-country variation (BCV), which is increasingly debated in international HRM (Gerhart and Fang 2005; Tung 2008; Tung and Baumann 2009; Keleş and Aycan 2011). Although studies of workplace practices have examined a variety of contextual influences affecting how organizations use their human resources and organize their workplace activities, typically this work focuses on one specific context (say, country or industry) at a time and does not consider multiple contexts simultaneously (Schuler, Budhwar and Florkowski 2002). Similarly, empirical contributions

to the ICV-BCV debate consistently show the relative unimportance of BCV vis-à-vis ICV, but do not say much about alternatives to country as a unit of analysis in international HRM, specifically sub-national or supranational categorizations (Van Hoorn 2015a).[1] Overall, the chief motivation for this paper is the question whether variation that occurs between countries is perhaps overemphasized in the business and management literature compared to variation that occurs between other extra-organizational contexts. The answer to this question, in turn, may have important implications for researchers and academics alike. Inter-country variation or dissimilarities are widely seen as exceptional, providing unique challenges for organizations that cross national borders to be active in multiple countries simultaneously (Hymer 1976; Zaheer 1995; Ghemawat 2001; Aycan 2005). Other units of analysis, including industry and supranational clusters as considered in the present study, typically receive less attention.[2] However, depending on the descriptive evidence that we uncover, it may well turn out that inter-industry variation or variation between supranational clusters are more substantial and therefore likely associated with more challenging difficulties for, say, the transfer of organizational practices from one context to another (cf. Kostova 1999; Lertxundi and Landeta 2012) than is inter-country variation. Although not considered as such in the extant literature, the (strategic) implications for organizations and their HRM policies of *inter-industry* or *inter-cluster* diversification could then actually be much more far-reaching than those of *international* diversification.

Following this backdrop and the paper's chief motivation, our key contribution is to provide descriptive evidence on the comparative importance of different, hierarchically nested units of analysis as extra-organizational contextual sources of differences in job autonomy as a key workplace practice (cf. Wright and Van de Voorde 2009; Björkman and Welch 2015). To do so, we rely on data from the well-known European Social Survey or ESS. This survey provides a unique data set, as it has collected questionnaire data on

workplace practices, specifically job autonomy, from nationally representative samples of respondents that cover 30 highly culturally and institutionally diverse countries as well as 62 two-digit industries (the complete industry division provided by Statistical Classification of Economic Activities developed by the statistical agency of the European Union, known as NACE codes).[3] As indicated, the specific workplace practice that we study is job autonomy, which refers to the degree to which a job "provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out" (Hackman and Oldman 1975, p. 162).

The data provided by the ESS enable us to analyze variation in job autonomy that occurs between individuals within organizations nested in industries nested in countries. Considering these two levels of analysis resonates with a tradition of considering either inter-country variation (BCV) or inter-industry variation in international HRM (see, for example, the reviews in Jackson and Schuler 1995, Schuler and Jackson 2005, Aycan 2005, and Björkman and Welch 2015). However, to provide additional input for our comparative assessment, we also seek to move beyond these traditional units of analysis, adding higher-level antecedents, meaning a contextual unit of analysis that transcends country as the highest-order unit of analysis. Culture researchers commonly find that the cultures of some countries exhibit sufficient similarities for these countries to be clustered together in a way that is insightful for international business and cross-cultural management (Hofstede 2001; Ronen and Shenkar 1985). Moreover, some scholars find that internationalization is best viewed as occurring within broader supranational regions (for instance firms expanding operations to other countries in North America or Asia) rather than as a truly global phenomenon (Ohmae 1985; Ghemawat 2003; Rugman and Verbeke 2004). Finally, several fields in social science find systematic supranational patterns in formal or regulatory institutions, for instance regulations governing employer-employee relationships, and have developed corresponding

supranational categorizations (Esping-Andersen 1990; Hall and Soskice 2001). Accordingly, we complete our analysis by also considering variation in job autonomy that occurs between various supranational politico-institutional clusters, in addition to inter-industry and inter-country variation.[4]

The results of our four-level multilevel analysis reveal dissimilarities in job autonomy across all units of analysis, although variation between individuals within organizations accounts for the bulk of total variation, some 90%. Most importantly, the industry in which respondents work can account for almost 5% of total variation in job autonomy. Inter-cluster and, especially, inter-country dissimilarities, on the other hand, are typically much smaller and, in most cases, lack statistical significance. Given this descriptive evidence, our main finding is that the differences in job autonomy associated with crossing country borders (i.e., inter-country dissimilarities) are not exceptionally large compared to other contextual dissimilarities, particularly those dissimilarities that one encounters when moving across industries. Taken together, we find that our analysis and the evidence that we present have important implications, as alluded to in the first paragraph of this introduction.

First, concerning international HRM, we find that, by indicating which extra-organizational context is comparatively most important for understanding differences in job autonomy, our multilevel evidence provides guidance for future work on understanding differences in job autonomy. Calls for more multilevel research in international HRM have also raised the issue of steering international HRM research towards those levels of analysis that appear most important for understanding the phenomena that are of interest to researchers and practitioners in the field (Wright and Van de Voorde 2009; Björkman and Welch 2015). A natural focus on BCV (cf. Schuler, Budhwar and Florkowski 2002; Boddewyn, Toyne and Martinez 2004; Dowling and Welch 2004) notwithstanding, our results subsequently suggest that the field could benefit from a partial reorientation. The

reason is simply that it is, in fact, industry context—and to a lesser extent supranational context—that offers researchers most potential when it comes to understanding differences in job autonomy. Meanwhile, our generic focus on extra-organizational contextual variation of course resonates with the broader idea of shifting attention in international HRM away from studying enterprises towards studying contexts, as emphasized by Delbridge, Hauptmeier and Sengupta (2011).

Second, concerning international business and cross-cultural management more broadly, we find that our explicit comparison of the importance of country to sub-national extra-organizational units of analysis for understanding dissimilarities in job autonomy enables us to flesh out in much more detail than heretofore the implications of the increasingly popular argument that ICV is more important than BCV (McSweeney 2009; Tung and Baumann 2009; Van Hoorn 2015a). We thereby focus on the concept of inter-country distance, both because this concept has been particularly prominent in the ICV-BCV debate (Shenkar 2001; Gerhart and Fang 2005; Tung and Verbeke 2010; Beugelsdijk, Maseland, Onrust, Van Hoorn and Slangen 2015) and because this concept is so widely applied in international business and cross-cultural management.[5] Specifically, we devote a large part of our implications section to develop a refinement to the use of the concept of inter-country distance in international business and cross-cultural management that takes into account our finding that firms can face substantial contextual dissimilarities or "distance" also without crossing a country border, notably when they seek to operate in multiple industries.

Overall, this paper provides an important first-ever quantitative insight into the comparative importance of different, hierarchically nested units of analysis as extra-organizational contextual sources of variation in a phenomenon of interest to scholars in international HRM. As such, the analysis presented in this paper is bound to raise some issues itself, only very few of which we are able to address here. This is a limitation of our paper but

also leads us to make several concrete suggestions for future research, not least of which concerns a more detailed (theoretical) examination of the factors that can explain the (contextual) variation in job autonomy that we uncover in this study.

Theoretical background and hypotheses

Our empirical assessment of the comparative importance of different contexts as sources of variation in phenomena of interest to international HRM focuses on differences in job autonomy as one of the key workplace practices that organizations use. We define workplace practices straightforwardly as the practices that organizations apply in the use of their human resources and the organization of their workplace activities. This is a broad definition, meaning that it covers a large variety of routines *applied at* and *features of* employees' workplace. Examples of workplace practices are practices related to recruitment and selection, compensation and benefits, training and development and work/life balance, but also, for instance, job autonomy, as studied by us. We focus our analysis on job autonomy because it is such a key feature of the workplace (Breaugh and Becker 1987) and taps into a variety of prominent debates in HRM, ranging from discussions of the optimal use of employees' unique tacit knowledge that trace back all the way to Smith (1776) to questions involving employee motivation (Spector 1986; Humphrey, Nahrgang and Morgeson 2007) and job quality (Greenhaus and Callanan 1994; Gallie 2007).

The main feature of our analysis is that we consider multiple extra-organizational contextual units of analysis simultaneously, specifically individuals within organizations that are nested in industries that are nested in countries that are nested in various supranational politico-institutional clusters. Substantively, we focus attention on the variation that occurs between the higher-level units of analysis, particularly on the comparative importance of these three units of analysis as a source of differences in job autonomy. This is not to say,

however, that the variation that occurs between individuals within organizations is uninteresting let alone unimportant. Indeed, much of the within-organization individual-level variation in our analysis likely derives from the fact that people work for different organizations that grant different amounts of job autonomy to their employees. Nevertheless, in light of the aim of the present paper and given the available data, we do not attribute variation between individuals to the specific organization that employs the individual.

Theories of context affecting organizations

Starting point for our empirical assessment is the idea that the three higher-order units of analysis that have our focus—industry, country, and supranational cluster—all affect job autonomy and other such workplace practices through the specific contexts that they provide, which, in turn, makes the adoption and application of some practices more prevalent but the adoption and application of other practices less prevalent. We use (structural) contingency theory (Woodward, 1965; Lawrence and Lorsch, 1967; Donaldson 2001) as a first theoretical antecedent to our assessment. Contingency theory emphasizes how the things that an organization does or does not do, including how much job autonomy it grants to its employees, are dependent on the environment in which the organization operates and, particularly, the organization's effective response to this environment. Hence, contingency theory predicts that organizations are managed and structured differently, because organizations face environments with different structural contingencies to which these organizations need to find a fit in order to ensure internal effectiveness. Tung (1979), for example, identifies eight types of environments, based on their level of complexity (high or low), their rate of change (high or low), and the routineness/non-routineness of their problem/opportunity states. Other work emphasizes differences in so-called task environment, which involves competitors, customers, labor supply and other such factors that

affect both the resources available to an organization and how the organization behaves as a way of ensuring effectiveness (Dess and Beard 1984).

A second theoretical antecedent to our assessment is institutional theory or new institutionalism (Meyer and Rowan 1977; DiMaggio and Powell 1983; Scott 1995). New institutionalism and (structural) contingency theory are closely related in that they invoke the same basic logic of the environment shaping organizations. However, whereas contingency theory is culture-free, emphasizing the role of structural and universalistic features such as markets, competition and the state of technology in structuring organizations, new institutionalism emphasizes the embeddedness of organizations in their institutional environments (Granovetter 1985; Williamson 2000). Institutional environments, in turn, vary on numerous dimensions. Notably, various authors stress the distinction between formal, regulatory institutions such as laws and regulations on the one hand, and informal, normative and cognitive institutions such as culture and social norms on the other (North 1990; Scott 1995; Williamson 2000).[6] Another important difference between contingency theory and the institutional approach to studying organizations is that the former emphasizes effectiveness while the latter emphasizes the idea of legitimacy in relation to societal institutions (DiMaggio and Powell 1983). Organizations adopt certain practices or structure themselves in a certain way because they are pressured to conform to the reigning regulatory, normative and cognitive institutions of their external environment. Lacking such institutional fit (as opposed to contingency fit), organizations lack or lose legitimacy. Workplace practices such as job autonomy are thus not adopted on the basis of universal contingencies, but specific to societal institutions that determine what organizations can and cannot do without losing legitimacy.

Finally, the system, society, and dominance (SSD) framework (Smith and Meiksins 1995; see, also, Pudelko and Harzing 2007 and Delbridge, Hauptmeier and Sengupta 2011) offers a

third relevant theoretical perspective. The SSD framework's consideration of system effects and societal effects resonates strongly with new institutionalism as well as those structural contingencies that differ systematically across societies. For instance, much like institutional pressures in new institutionalism, system effects refer to social relations and forces within a country such as markets and employer-employee interactions, which the SSD framework finds impose a disciplinary mechanism on organizations. Societal effects similarly refer to macro-level circumstances that provide the external environment for organizations to operate in. Dominance effects, in contrast, add a perspective that transcends traditional boundaries separating one context from another, notably national borders. Specifically, the idea is that there exist worldwide best practices, typically thought to be applied by organizations from the most successful economies, and that these practices get diffused from these economic powerhouses to other countries. In case of successful diffusion, there may be convergence in job autonomy or other such workplace practices, although diffusion is often not perfect and local adaptation may still take place. In addition, organizations from different countries may signal out different countries—Japan, Germany and the U.S. are often mentioned in the literature (Smith and Meiksins 1995)—from which to adopt best practices.

Differences in context and contextual differences in job autonomy

Building on the above three theoretical perspectives—(structural) contingency theory, new institutionalism and the SSD framework—our question concerning industry, country, and supranational cluster as sources of variation in job autonomy, becomes a question about whether being embedded in these three units of analysis exposes organizations to substantially different external environments. Below, we provide a discussion of this question for different contexts, culminating in the formulation of three hypotheses about contextual variation in job autonomy.

Inter-cluster and inter-country variation and job autonomy

To start, we focus on country and supranational cluster as units of analysis. The question whether different countries and different supranational clusters expose organizations to substantially different external environments can be readily answered considering the many frameworks and studies devoted both to charting differences between countries and clusters and to discussing the (potential) relevance of these differences for organizations. Frameworks that immediately come to mind are those by Hofstede (2001) and the Global Leadership and Organizational Behavior Effectiveness or GLOBE project (House, Hanges, Javidan, Dorfman and Gupta 2004). These two frameworks not only identify differences in national culture along several dimensions, but also explicitly link such differences in informal institutions to cross-national differences in organizational behavior. Individualist culture, for instance, is associated with more formalized relations between managers and subordinates and more extensive use of objective performance criteria (see Chen 2004, Moran, Harris and Moran 2011, and Van Hoorn 2014a for details). Other research provides an in-depth analysis of national differences in formal institutions. A chief example is the Worldwide Governance Indicators or WGI project (Kaufmann, Kraay and Mastruzzi 2009). The WGI project identifies six regulatory dimensions and examples are *Rule of law* and *Regulatory quality*, which are defined as the extent to which people have confidence in and abide by the rules of society and as the ability of the government to formulate and implement policies and regulations fostering private sector development respectively (Kaufmann, Kraay and Mastruzzi 2009, p. 6).

Importantly, the systematic study of differences in formal and informal institutions is not limited to the societal level, but also involves supranational categorizations. As emphasized in the literature on semi-globalization, for various phenomena it may actually be more

informative to transcend national borders as the differences most relevant to cross-border business occur between rather than within supranational clusters (Ohmae 1985; Ghemawat 2003; Rugman and Verbeke 2004). Researchers in international HRM (and international business and cross-cultural management more broadly) are probably most familiar with the cultural cluster classifications provided by both Hofstede (2001) and the GLOBE project (House et al. 2004). However, other social science disciplines have delineated country groups along different lines, emphasizing supranational similarities and dissimilarities in formal institutions. Two frameworks are particularly prominent in this regard. The first is the varieties of capitalism (VoC) framework, which considers systematic differences in a broad set of institutional arrangements, not least arrangements governing employer-employee relationships (Esping-Andersen 1990; Hall and Soskice 2001). The second framework revolves around countries' legal tradition (e.g., civil law versus common law) (La Porta, Lopez-de-Silanes and Shleifer 2008). Compared to the VoC framework, legal tradition has not yet received much attention in business and management. The idea of classifying supranational clusters according to legal tradition is extremely prominent in both finance and economics (La Porta, Lopez-de-Silanes, Vishny and Shleifer 1998; Glaeser and Shleifer 2002), however, where legal tradition is found to affect numerous laws and regulations that in turn have important economic consequences (see La Porta, Lopez-de-Silanes and Shleifer 2008 for a survey). Prominent institutional differences between groups of countries with different legal origins include the regulation of competition via market entry by new firms (Djankov, La Porta, Lopez-de-Silanes and Shleifer 2002) and the flexibility of the labor market (Botero, Djankov, La Porta, Lopez-de-Silanes and Shleifer 2004).

Finally, while the above discussion has focused on systematic differences in formal and informal institutions across countries and supranational clusters, there is also much evidence on such systematic differences in the kind of structural features of the external environment

emphasized by contingency theory. Labor supply, for instance, varies greatly between countries, as evidenced by widely diverging (youth) unemployment rates, (female) labor force participation rates, and self-employment rates, among others (Antecol 2000; Nickell, Nunziata and Ochel 2005; Torrini 2005). Another example is the state of technology. Various studies document substantial variation in the historical spread of a broad range of (production) technologies across countries (Comin, Hobijn and Rovito 2008; Comin and Hobijn 2012), including, more recently, the adoption of the Internet and various ICT practices (Erumban and De Jong 2006; Andrés, Cuberes, Diouf and Serebrisky 2010).

Translating the above discussion into hypotheses concerning inter-cluster (supranational) and inter-country variation in job autonomy is relatively straightforward. There is, in fact, prior work that provides explicit consideration of the role of differences in formal institutional arrangements in shaping job autonomy. Dobbin and Boychuck (1999), for instance, emphasize the role of the employment system, including unions, while Gallie (2007) focuses on variation between different so-called production regimes, specifically coordinated market economies versus liberal market economies (cf. Hall and Soskice 2001). A chief idea in this literature is the idea that employees may join forces to pressure employers into improving job quality, among others, by offering employees more discretion in performing their job tasks. Importantly, though, institutional influences on job autonomy are not limited to formal institutional arrangements and include effects due to informal institutions, i.e., culture, as well. Notably, following Fukuyama (1995), there is some work that considers how higher levels of social trust may induce employers to grant more autonomy to their workers, thus allowing for more specialization in the production process (Bloom, Sadun and Van Reenen 2012; Van Hoorn 2013). The underlying argument is that job autonomy is associated with improved efficiency in the production process but can also entail certain costs as a lack of monitoring and control leaves more room for employee shirking.

Trust, however, works to mitigate this problem, as it fosters employee cooperation, despite a lack of formal incentives for employees to keep their employers' interests at heart.

As we have already established that both formal and informal institutions vary systematically across countries and supranational politico-institutional clusters, we propose the following two hypotheses:

Hypothesis 1: The average level of job autonomy varies between supranational politico-institutional clusters.

Hypothesis 2: The average level of job autonomy varies between countries.

Inter-industry variation and job autonomy

So far, we have focused on contingencies that are likely to affect job autonomy as well as vary systematically across countries and supranational clusters. Concerning the effect of industry context on job autonomy, we find that similarly relevant systematic differences exist between industries, particularly with regard to structural contingencies. Most generally, industries differ widely in the production technologies that they employ and in the complexity of their production activities. For instance, related to Tung's (1979) distinction between external environments on the basis of the routineness/non-routineness of their problem/opportunity states, various authors have classified industries on the basis of the routineness of these industries' production processes (Costinot, Oldenski and Rauch 2011; Autor and Dorn 2013). Other such industry classifications show substantial variation in factor intensities (i.e., how intensely industries use skilled and unskilled labor, capital and raw materials) (Romalis 2004), as well as in the extent to which industries' value-added processes involve interaction with (prospective) customers (Liu, Feils and Scholnick 2011).

The clearest rationale for expecting systematic inter-industry differences in job autonomy actually derives from the large literature considering (technological) differences in the nature of the value-added process in various industries (Costinot, Oldenski and Rauch 2011; Liu, Feils and Scholnick 2011). Particularly, we expect that job autonomy will be higher in industries that have more complex (i.e., less routine) and more skill-intensive production processes. The reason is that we expect that in such industries tacit, non-codifiable knowledge is more important and that allowing workers the freedom to exercise their own judgment allows organizations to make optimal use of such knowledge among their employees. More generally, we strongly expect that different industries grant different amounts of job autonomy, simply because every process or production technology requires a different way of organizing the workplace to ensure optimal efficiency. Meanwhile, several studies exist that have linked industry or sector to specific organizational cultures and accompanying organizational routines. Gordon (1991), for instance, proposes different features of an industry such as its competitive environment as determinants of organizational culture. More directly supportive of the role of structural contingencies, Chatman and Jehn (1994) show empirically that level of technology and industry growth, among others, affect organizational culture. Other work reports important differences in managerial practices across sectors, particularly government versus business (Noordegraaf and Stewart 2000). Similarly, there is evidence of industry context moderating relationships involving workplace practices. Notably, Datta, Guthrie and Wright (2005) find that industry characteristics such as capital intensity affect the value of high-performance work systems for productivity, while Combs, Liu, Hall, and Ketchen (2006) find that high-performance work systems have a stronger effect on organizational performance in the manufacturing sector than in other sectors. Finally, there is actually some evidence on industry differences in job autonomy, for instance, between the *Manufacture of textiles* and the *Manufacture of medical, precision and*

optical instruments, watches and clocks (Dobbin and Boychuk 1999; Bloom, Sadun and Van Reenen 2012; Van Hoorn 2014b). Taken together, we propose the following hypothesis concerning industry as a source of variation in job autonomy:

Hypothesis 3: The average level of job autonomy varies between industries.

Effect sizes

In conclusion to our theoretical discussion, we consider a limitation of testing the above three hypotheses using the standard approach offered by probability theory. A key contribution of our paper is to provide an empirical assessment of the comparative importance of different, hierarchically nested units of analysis as extra-organizational contextual sources of differences in job autonomy. Null hypothesis significance testing (NHST), however, does not speak to the size or quantitative importance of the amount of variation that can be attributed to different variables. Hence, to complete our analysis, we also resort to some descriptive evidence. Specifically, we formulate a fourth hypothesis that sets the stage for an exploration of the comparative importance of industry, country, and supranational politico-institutional cluster as sources of variation in job autonomy. The essence of this hypothesis is thus not the testing of a well-defined theoretical claim but to act as a basis from which to engage in assessing the importance of the variables that we consider in terms of differences in job autonomy.

In the preceding theoretical discussion, we found clear reasons to expect significant variation in job autonomy between industries, countries, and supranational politico-institutional clusters. In contrast, based on these same arguments, we do not find much theoretical rationale to argue that any one of these three extra-organizational contextual units of analysis is associated with either substantially more or substantially less differences in job

autonomy than any of the other units is. If we were pressed to identify one of these contexts as quantitatively more important than the other contexts, we would pick industry, however. The reason is that extant evidence strongly suggests that the degree to which value-added activities involve job autonomy is a stable trait of industries. Particularly, Van Hoorn (2014b) constructs several alternative indicators of industries' average level of job autonomy, finding that measured inter-industry differences in job autonomy are more or less similar, regardless of how exactly they are measured. Specifically, patterns of industry differences in job autonomy are the same, whether one considers survey data collected in Europe, the U.S. or from a global sample including such countries as Japan, the Philippines, Mexico, Taiwan, South Africa and Dominican Republic. Moreover, even using differently-phrased questionnaire items to measure job autonomy has almost no effect and still results in strikingly stable patterns of inter-industry differences in job autonomy. Overall, it thus seems that job autonomy is a fundamental feature of industries. Accordingly, we are inclined to expect that inter-industry variation is a more important source of differences in job autonomy than is variation that occurs between countries or supranational politico-institutional clusters. Hence, we formulate the following hypothesis:

Hypothesis 4: Inter-industry variation accounts for a larger share of total variation in job autonomy than either inter-cluster or inter-country variation do.

In the next section, we explain the way we go about examining this hypothesis using an assessment that does not rely on probability theory.

Empirical approach

Data

Sample

The main source of the data needed for our empirical analysis of differences in job autonomy is the European Social Survey or ESS. The ESS is a survey of nationally representative samples that has been held bi-annually since 2002. The data thus refer to repeated cross-sections for the countries covered by the ESS. Moreover, the sample covers individuals working for any sort of organization (large or small, profit or non-profit, et cetera) and in any type of job (from day laborer to judge and from office clerk to university professor). Some of the data gathered in the ESS are subjective / self-reported, involving questionnaire items that ask respondents to rate themselves or certain aspects of their lives. Other data, however, are objective, for instance, information concerning respondents' marital status, year of birth, country of residence, et cetera. To elicit subjective assessments from respondents, the ESS typically uses Likert-type scales, while the objective data are recorded by interviewers using categories.

For reasons of consistency in the coding of industries, in our analysis, we use the first four waves of the ESS, conducted in 2002, 2004, 2006, and 2008. The ESS is the source for our main dependent variable, which concerns a subjective assessment, and most of our independent variables, which concern objective classifications of respondents based on their country of residence and the industry in which they are employed. Only for the classification of the countries in our sample into higher-level, politico-institutional clusters do we rely on data from other sources that we describe in detail below. In general, we exclude observations with missing data, leaving a sample that comprises up to N_{L1} = 138,445 individuals from N_{L3} = 30 countries. A limitation of the ESS would seem to be that it covers mostly European countries. However, as mentioned, the sample that we consider is actually highly culturally and institutionally diverse (see Note 3 for details). The website of the ESS, http://www.europeansocialsurvey.org, provides further information about the survey and

access to the complete data set.

Dependent variable: Measures of job autonomy

The dependent variable in our analysis concerns job autonomy. We have several reasons for selecting this particular workplace practice. A most obvious reason is pragmatic, specifically the availability of unique cross-country cross-industry data on this workplace practice from the ESS. However, as alluded to above, our selection of this practice is also inspired by the fact that job autonomy is one of the core job characteristics (Breaugh and Becker 1987) and a key concept in the literature on the economic consequences of the division of labor that traces back to Smith (1776). Moreover, job autonomy is widely discussed in the HRM literature in relation to a variety of key organizational issues, not least of which is employee motivation and organizational commitment (Spector 1986; Humphrey, Nahrgang and Morgeson 2007).

Following past work, we use a self-reported measure of job autonomy that asks respondents, i.e., workers, to rate their own job autonomy. The specific item that we use reads as follows:

I am going to read out a list of things about your working life. Using this card, please say how much the management at your work allows/allowed you to decide how your own daily work is/was *organised*?

Respondents can answer this item using a Likert-type scale that ranges from 0, "I have/had no influence" to 10, "I have/had complete control." Table 1 presents a description of this measure and summary statistics for the sample that remains after exclusion of observations with missing data.

Measured job autonomy is the main variable in our empirical analysis. Hence, even though

our measure has been used before (Esser and Olsen 2012; Van Hoorn 2014b) and comparable measures have been widely validated (again see Hackman and Oldham 1975), we also consider the construct validity of this measure a little bit ourselves. As Table A.1 in the appendix shows, self-reported job autonomy increases with individuals' educational background and their experience working for their current employer, which are the exact relationships that we expect from a valid measure of job autonomy.

Nevertheless, as one of our robustness checks, we consider an alternative measure of autonomy at the workplace. As stated, our choice of which workplace practices to consider in our analysis is constrained by the availability of the unique cross-country cross-industry data collected through the ESS. However, we are able to additionally consider a measure of policy influence, which is obtained using a questionnaire item highly similar to the item used to measure job autonomy:

I am going to read out a list of things about your working life. Using this card, please say how much the management at your work allows/allowed you to influence policy decisions about the activities of the *organisation*?

As before, answers can range from 0 ("I have/had no influence") to 10 ("I have/had complete control") and also this measure relates to education and experience working for the current employer in a way that supports its construct validity (Table A.1). Table 1 again presents a description of this dependent variable and summary statistics for the sample that remains after exclusion of respondents with missing data (N_{L1} = 119,932 individuals from N_{L3} = 30 countries).

Finally, their apparent construct validity notwithstanding, a drawback of our measures of job autonomy and policy influence is that they are both based on a single-item measurement

scale, which could make them prone to measurement error. However, as the job autonomy measure and the policy influence measure refer to related features of workplace practices, there is an opportunity to combine these two measures in a single autonomy-influence index, thus constructing a two-item measurement scale (see Van Hoorn 2015). As expected, factor analysis of the two measures results in a single factor that has an Eigenvalue of 1.65 (well above the standard cut-off value of 1) and accounts for 86.2% of total variation in the two measures. Moreover, the autonomy-influence index thus constructed has high internal consistency with a Cronbach's alpha of 0.789, which is more than adequate (George and Mallery 2003). In our empirical analysis, we use this autonomy-influence index as another means to assess whether our baseline results are robust to the specific measure of workplace autonomy used.

Independent variables: The three main units of analysis

The independent variables in our empirical analyses are the different, hierarchically nested units of analysis that we discern. As indicated, at the highest level, we consider different politico-institutional clusters to which countries can belong, delineated by culture, legal tradition, or variety of capitalism (L4). We further consider countries (second highest level; L3) and industries (third highest level; L2), resulting in three different independent variables. In the remainder of this paper, we will refer to this variation at the lowest level of analysis as within-organization individual-level variation. We note, however, that in the context of multilevel modeling (see below) the standard term for this variation is residual variation (e.g., Snijders and Bosker 2012).

To identify supranational politico-institutional clusters, we draw on three literatures concerning varieties of capitalism, cultural clusters, and legal traditions respectively (Esping-Andersen 1990; Hofstede 2001; La Porta, Lopez-de-Silanes and Shleifer 2008). We

subsequently consider three different sets of supranational clusters. Table 1 describes the three different sets of clusters and the exact sources for our classification of countries as belonging to a particular supranational cluster.

<< Insert Table 1 near here >>

Data for our two remaining independent variables again come from the ESS. As indicated, the ESS is a cross-national survey that records the country for every respondent interviewed. As the descriptive statistics in Table A.2 in the appendix show, average job autonomy differs quite substantially between the 30 countries in our sample, ranging from 4.21 in Hungary to 7.49 in Sweden. Differences in policy influence between countries are also large, although the range of average country scores is more compressed.

Similarly, the ESS records the industry in which respondents are employed using revision 1.1 of the Statistical Classification of Economic Activities developed by the statistical agency of the European Union (what are known as NACE codes). Table A.3 in the appendix presents descriptive statistics for all two-digit industries covered by the NACE scheme, 62 in total. As with country, average job autonomy and policy influence differ quite substantially across industries.

Levels of analysis and hierarchical structure of the data

An essential feature of our data (and the ensuing analysis) is their hierarchical nature with units of analysis nested in yet other units of analysis. For the most part, the hierarchy in the data is straightforward: supranational clusters provide a higher-level context to countries, whereas countries provide a higher-level context to individuals within organizations. However, we also consider industries, which do not fit neatly into this hierarchical scheme, as

the same industry is typically present in more than one country simultaneously.

<< Insert Figure 1 near here >>

We follow the standard approach of cross-classifying industries. Specifically, we cross-classify industries within countries, thus creating unique country-industry combinations. The whole set of country-industry combinations acts as the second level of analysis in our study, hierarchically above individuals within organizations (L1) but below countries (L3). Figure 1 graphically illustrates the hierarchical structure of our data and the cross-classification of industries within countries that creates the unique country-industry combinations that we consider in our analysis. The same approach of cross-classification is used in the study by Van Hoorn (2015a), which cross-classifies different social classes within countries as a way of studying the importance of social class vis-à-vis country as sources of variation in people's values. Still, though, it would be possible, in principle at least, to structure our data so that industries are at the highest level of analysis. However, this would involve cross-classifying both supranational clusters and countries and nest them in industries, which would render a very complex and counterintuitive structure for our data. Indeed, people commonly refer to specific industries within particular countries—say the manufacturing of cars in Germany or the oil and gas industry in Russia—but never to countries within industries. A more general discussion of cross-classification in the context of empirical analysis of data involving multiple levels of analysis can be found in Fielding and Goldstein (2006).

Method

Our statistical method is multilevel modeling, which we use to perform a variance components analysis. This analysis attributes total variance in job autonomy to its four

components, namely to the three hierarchical units of analysis in our study (the independent variables)—variation between industries (L2), variation between countries (L3), variation between supranational clusters (L4)—and classifies the remainder as within-organization individual-level variation (L1).

The multilevel approach that we employ can be described by four formal models, one for each hierarchical level, with no predictors but only so-called random intercepts (Snijders and Bosker 2012). These four models combine to one overall model, allowing modeling of variation at all levels simultaneously. We use A_{ijkl} to denote the amount of job autonomy reported by individual i (L1), working in industry j (L2), which is cross-classified in country k (L3), which belongs to supranational cluster l (L4). The Level-1 model is subsequently given by:

$$A_{ijkl} = \beta_{0jkl} + e_{0ijkl}, \tag{1.1}$$

where e_{0ijkl} is a random individual-level error term and β_{0jkl} is random at the industry level. Next, the Level-2 model describes β_{0jkl} as:

$$\beta_{0jkl} = \beta_{00kl} + u_{0jkl}. \tag{1.2}$$

In this model, u_{0jkl} is a random industry-level error term and β_{00kl} is random at the country level. As before, this last term is described in more detail by the Level-3 model:

$$\beta_{00kl} = \beta_{000l} + v_{0kl}, \tag{1.3}$$

where v_{0kl} is a random country-level error term and β_{000l} is random at the supranational level. The Level-4 model then reads as follows:

$$\beta_{000l} = \gamma_{0000} + f_{0l}, \tag{1.4}$$

where γ_{0000} is a mean that is fixed over all supranational clusters and f_{0l} is a random error term at the supranational level. Finally, the complete empirical model is given by:

$$A_{ijkl} = \gamma_{0000} + f_{0l} + v_{0kl} + u_{0jkl} + e_{ijkl}. \tag{2}$$

Since we want to attribute total variation in job autonomy to different units of analysis, we are interested in the variance for this model. With γ_{0000} being a fixed variable, the variance for the complete model (Equation 2) is given by:

$$\mathrm{var}(A_{ijkl}) = \mathrm{var}(f_{0l}) + \mathrm{var}(v_{0kl}) + \mathrm{var}(u_{0jkl}) + \mathrm{var}(e_{ijkl}) = \sigma^2_{f0} + \sigma^2_{v0} + \sigma^2_{u0} + \sigma^2_{e0}. \tag{3}$$

Equation (3) decomposes total variation in job autonomy into its four components. We can subsequently test these variance components for statistical significance, as specified in Hypotheses 1-3. To gauge the quantitative importance of each variance component (Hypothesis 4) we can further express the variance components as a percentage of total variation. This last measure is equal to the intra-class correlation for a particular unit of analysis so that an example for variation that occurs between supranational clusters can be given using the following equation: $\rho_{cluster} = \sigma^2_{f0} / (\sigma^2_{f0} + \sigma^2_{v0} + \sigma^2_{u0} + \sigma^2_{\varepsilon 0})$. The interpretation of the intra-class correlation coefficient is that it quantifies the variation between classes (for

instance between clusters) but also the sameness of the lower-level units that comprise these classes (for instance the sameness of countries). Concretely, a higher intra-class correlation means that units within a class are more alike, possibly to the extent that they are exactly the same (intra-class correlation equal to 100%). A lower intra-class correlation, on the other hand, means that units within a class are less alike, possibly to the extent that these units are completely different from each other and do not share any resemblance (intra-class correlation equal to 0%).

As stated, the distinct variance components that we identify have a direct link to H1-3 and enable testing of these three hypotheses in terms of a null hypothesis of no effect that can be rejected in favor of the alternative hypothesis on statistical grounds. Hypothesis 4, however, calls for descriptive evidence and, as mentioned above, cannot be tested using the tools offered by probability theory. Instead, this hypothesis calls for a subjective assessment of whether one of the variance components, specifically inter-industry variation, is a substantially more important source of variation in job autonomy than the other two variance components (inter-cluster and inter-country variation) are. As a benchmark, we find it useful to refer to the concept of order of magnitude, which refers to a size ratio between two things or phenomena of maximum 10 (Merriam-Webster 2015; see, also, Van Hoorn 2015a). Specifically, we deem Hypothesis 4 confirmed, meaning that inter-industry variation is a substantially more important source of differences in job autonomy than either inter-cluster or inter-country variation are, if the ratio between the former and the latter exceeds 10. Still, given the exploratory nature of H4, we very much encourage readers to apply their own standards in evaluating the comparative importance of supranational clusters, countries and industries as extra-organizational contextual sources of differences in job autonomy.

Practically, we estimate our empirical model three times, once for every set of supranational politico-institutional clusters that we have identified (see above). We estimate

the empirical models using maximum likelihood procedures. The software used is MLwiN.

Empirical results

Baseline results

Table 2 presents the results for our baseline model. Not explicitly quantified, within-organization individual-level variation accounts for the bulk of total variation in job autonomy, typically about 90%, which is in line with the 83% to 89% individual-level variation that Liao, Toya, Lepak and Hong (2009) find in their study of between-group and within-group variation in employee-experience of high-performance work systems. This relatively high percentage reflects both genuine dissimilarities in the amount of job autonomy that organizations grant to their employees, as well as invalid variance that is due to measurement error. More specifically, measurement error tends to accumulate at the lowest level of analysis (e.g., Van Hoorn 2015a) and as a result the percentage of within-organization individual-level variation in job autonomy that we observe does not only comprise valid variance but also quite some idiosyncratic variance that is due to the individual-specific way in which respondents perceive and rate the amount of autonomy that they experience in their jobs.

More relevant given the topic and aim of this paper, results indicate that country fixed effects are a relatively minor source of differences in job autonomy, accounting for no more than 2.20% of total variation. Moreover, in two out of three cases, the amount of variation that occurs between countries (BCV) is not statistically significant at usual levels ($p > 0.05$). Variation between supranational clusters appears more important than BCV but is even less precisely estimated and lacks statistical significance at usual levels ($p > 0.05$) in all cases. Most importantly, outside of within-organization individual-level variation, inter-industry variation appears to be the chief source of differences in job autonomy. Specifically, across

the different model specifications, industry accounts for approximately 4.7% of total variation in job autonomy and is always highly statistically significant.

<< Insert Table 2 near here >>

In terms of our hypotheses, we find that Hypothesis 3, identifying industry as a source of variation in job autonomy, is strongly supported. On the other hand, the empirical evidence does not provide much support for Hypotheses 1 and 2 concerning inter-cluster (H1) and inter-country (H2) variation. Meanwhile, in most cases the descriptive evidence supports the idea captured in Hypothesis 4, as inter-industry variation tends to account for a larger share of total variation in job autonomy than either inter-cluster or inter-country variation do. Typically, however, the variation between the different units of analysis is of the same order of magnitude (ratio < 10). The only exception occurs when considering legal tradition to classify countries into supranational clusters (middle rows of Table 2). In this case, inter-country variation in job autonomy is more than an order of magnitude smaller than both inter-cluster and inter-industry variation (4.64% / 0.21% > 10).

Robustness checks

Alternative dependent variables

To assess the robustness of our baseline results we perform four checks. First, we replace our measure of job autonomy with two alternative measures. The first alternative measure is a measure that captures the extent to which employees are allowed to influence policy decisions in the organization for which they work. The second alternative measure combines the original measure of job autonomy with this alternative measure into a single autonomy-influence index (see above).

<< Insert Tables 3a and 3b near here >>

Results are largely identical to our baseline results, revealing the same pattern of inter-industry dissimilarities outweighing dissimilarities between countries and supranational clusters (Tables 3a and 3b). In addition, we encounter the same division of variation across supranational clusters and countries with the former being more important quantitatively but lacking statistical significance at usual levels ($p > 0.05$). Similarly, the results again confirm Hypothesis 3, while there is still no overwhelming evidence to support Hypotheses 1 and 2. Hypothesis 4 is supported under the same proviso as before.

Minimum number of observations per industry

As our second robustness check, we repeat our baseline analysis with a limited number of industries. Several of the industries in our analysis comprise relatively few individual respondents (see Table A.3 in the appendix). A possible consequence of having a low number of observations per industry is that inter-industry variation in job autonomy is imprecisely or even incorrectly assessed due to measurement error. To deal with this contingency, we limit our sample to industries with at least 1000 individual observations. However, also in this case, results do not change very much (Table 4). Behind within-organization individual-level variation, inter-industry variation remains the most important source of variation in job autonomy, accounting for approximately 4.6% of total variation. Meanwhile, dissimilarities between supranational clusters and countries are not negligible, but still lack statistical significance at usual levels ($p > 0.05$). Hence, while results again strongly support Hypothesis 3, the evidence does not provide such strong support for Hypotheses 1 and 2. Meanwhile, Hypothesis 4 is again supported under the same proviso as before.

<< Insert Table 4 near here >>

Assessing inter-industry and inter-country variation with alternative multilevel models

For our third robustness check, we consider in more detail exactly how important industry is for differences in job autonomy. A key feature of the results presented so far concerns the importance of inter-industry variation as a percentage of total variation, especially when compared to inter-country variation. However, a possible objection to our descriptive evidence is that we cannot really compare sources of variation at different levels—industries at L2 and countries at L3—and need to assess the importance of inter-industry and inter-country variation at the same level of analysis. To address this objection, we revert to estimating three-level multilevel models rather than four-level multilevel models. Specifically, we consider individuals within organizations (L1) that are nested in cross-classified industries (L2) that are nested in supranational clusters (L3), and individuals within organizations (L1) that are nested in countries (L2) that are nested in supranational clusters (L3), so that both industry and country are at the same level of analysis (i.e., at L2). To be sure, three-level multilevel models are not our preferred models, as reducing the number of levels in the analysis provides less understanding of differences in job autonomy and affords us less opportunity to gauge the comparative importance of extra-organizational units of analysis as a source of differences in job autonomy. That being said, Table 5 presents the results.

<< Insert Table 5 near here >>

Results confirm the importance of industry over country as a source of differences in job autonomy. Typically, inter-industry variation is about twice as important as inter-country variation, accounting for approximately 6% versus approximately 3% of total variation in job autonomy. Compared to earlier findings (Table 2), the importance of country has increased, however, both quantitatively and in terms of statistical significance. Nevertheless, the key finding that inter-industry variation is highly important for understanding differences in job autonomy remains.

Controlling for period (i.e., year fixed) effects

As a fourth and final robustness check, we account for possible biases due to year-specific measurement error. Our data have been collected in four separate years—2002, 2004, 2006 and 2008—and idiosyncratic influences unique to each period of data collection may have affected how people rate their job autonomy. We check for potential biases that result from such measurement error in two steps. First, we run a regression with job autonomy as the dependent variable and year fixed effects as the independent variables and save the residuals. The residuals represent a measure of job autonomy that is free from any year-specific influences so that in the second step we repeat our baseline analysis using these residuals as the dependent variable. Table 6 presents the results.

<< Insert Table 6 near here >>

Results are very similar to the results of the original analysis (see Table 2) with inter-industry dissimilarities in job autonomy typically at least twice as large as inter-country dissimilarities in job autonomy. Hence, we can safely conclude that our findings concerning the comparative importance of different units of analysis for understanding differences in job

autonomy are not biased by the fact that we have considered data that have been collected over a number of years.

Discussion

The previous section has presented our empirical results on differences in job autonomy across industries, countries and supranational clusters. In this section we reflect on these results, particularly the descriptive evidence uncovered by our analysis, and discuss limitations of our analysis, including some logical follow-up questions that cannot be addressed within the scope of the present paper.

Differences in job autonomy across countries and other units of analysis

What exactly do our empirical results tell us about the extra-organizational contextual sources of differences in job autonomy? In a way, our analysis has been exploratory, presenting descriptive evidence on the comparative importance of different contextual units of analysis for understanding differences in job autonomy (cf. Wright and Van de Voorde 2009; Björkman and Welch 2015). Nevertheless, our results prove highly illuminating. Extant work on ICV vis-à-vis BCV, focusing on people's values, finds that country is the most important observable source of variation, more than twice as important as sub-national region or social class for instance (Van Hoorn 2015a). The descriptive evidence brought forth in our analysis, however, shows that country is not uniquely important. Rather, when it comes to job autonomy, BCV matters less than other contextual sources of variation that also exist outside of organizations and are also easily observable. Most notably, the amount of variation in job autonomy that is associated with industry consistently exceeds the amount of variation in job autonomy that is associated with country, sometimes by more than an order of magnitude. In fact, even in those analyses in which BCV makes it largest contribution to total variation,

inter-country dissimilarities still account for less than half of the variation in job autonomy accounted for by inter-industry dissimilarities. Meanwhile, variation between supranational politico-institutional clusters also seems more important than BCV but estimates are imprecise, lacking statistical significance at usual levels ($p > 0.05$) in all cases. Nevertheless, for firms, there seems to be an important distinction between globalization and region-focused semi-globalization (Ohmae 1985; Ghemawat 2003; Rugman and Verbeke 2004), as the last form of border-crossing business endeavors appears to entail fewer dissimilarities in job autonomy than genuine global expansion does. Indeed, given that inter-cluster variation can be quite high (and inter-country variation quite low), countries within supranational clusters appear strikingly similar, making a host country belonging to the same cluster as an MNE's home country a logical choice for locating a subsidiary that drastically reduces some of the key challenges traditionally associated with international diversification (Hymer 1976; Zaheer 1995; Ghemawat, 2001; Eden and Miller 2004).

In light of this evidence, the conclusion becomes unavoidable that inter-country dissimilarities are not an exceptionally large source of contextual dissimilarities in job autonomy. It is one thing to say that ICV matters or even that ICV matters more than BCV, which, so far, has been the chief concern in the ICV-BCV literature (Tung 2008; McSweeney 2009; Tung and Baumann 2009; Van Hoorn 2015a). It is another thing to say, however, that firms can easily face more "distance," i.e., more sizeable contextual dissimilarities, when they seek to operate in multiple industries, which is the main finding of our analysis. We discuss the implication of this finding in more detail in the next section. First, however, we discuss some limitations of our analysis and the descriptive evidence it has brought forth.

Limitations

While the results of our analyses are generally robust, there are also some more generic

limitations to our research. First, we have relied on measures of workplace practices as perceived by employees. While such self-reported measures are widely used (e.g., Allen, Shore and Griffeth 2003; Kuvaas 2008; Stamper and Johlke 2003) and valid (as also shown by us), a disadvantage of relying on respondents' own perceptions could be that measurement error is higher in comparison to measures involving ratings by others, i.e., in comparison to measures that are not self-reported. Some researchers even argue that using self-reports to measure workplace practices leads to biased indicators, although this would only pose a problem for research linking measured workplace practices to organizational performance (Bloom, Genakos, Sadun and Van Reenen 2012).[7] In our analyses, measurement error would inflate the amount of variation that occurs between individuals within organizations (cf. Van Hoorn 2015a). However, our study does not focus on within-organization individual-level variation but on the comparative importance of higher-order units of analysis, not least industry. Hence, for mathematical reasons, there is no problem with the use of self-reported measures of workplace practices introducing biases in our analysis (ibidem). More generally, we cannot think of any clear theoretical reason as to why our results on the comparative importance of extra-organizational contexts would not generalize to non-self-report types of measures of job autonomy. Still, an interesting follow-up to the present research would of course be to study the multilevel sources of variation in other, non-self-report types of measures of job autonomy or measures of job autonomy as perceived by managers instead of by subordinates.

Second, and related to the first point, our analysis involved a specific workplace practice namely job autonomy. The concept of workplace practices is much broader, however, including, among others, practices related to recruitment and selection, compensation and benefits, training and development, and work/life balance. Hence, we cannot generalize from our analysis to say exactly what is the comparative importance of the different units of

analysis—industry, country, and supranational politico-institutional cluster—as contextual sources of variation in practices concerning these other domains. Additional research, including an alternative cross-country cross-industry data set, would be required to assess this issue. Similarly, future research may move beyond workplace practices to consider managerial practices concerning such issues as quality control, inventory management, internal auditing, et cetera. Again, we cannot say exactly whether our descriptive evidence on the comparative importance of different units of analysis generalizes from workplace practices to managerial practices. However, as managerial practices seem more prominent aspects of organizations and are more visible than workplace practices are, these practices are likely to be more sensitive to dominance effects (and the resulting convergence to a worldwide best practices model) (Smith and Meiksins 1995; Pudelko and Harzing 2007) than workplace practices are. Such convergence, in turn, implies a reduction in both inter-country and inter-cluster variation, which, for mathematical reasons (cf. Van Hoorn 2015a), would imply that inter-industry variation becomes relatively more important as a source of variation.

Third, the geographic scope of the countries that we considered is limited. On the one hand, our data are unique, both in their level of detail (notably the inclusion of respondents' industry) and in the number of countries and individuals covered. Similarly, our sample was highly culturally and institutionally diverse. On the other hand, however, our sample included mostly European countries and not, for instance, countries from East Asia or Latin America. Hence, we think it would be interesting to expand our analysis to cover other regions, although we recognize that the resources required for conducting such a comprehensive cross-national survey are likely to be prohibitive (cf. Wall and Wood 2005).

Fourth, our analysis does not yet explain why differences in job autonomy occur. Indeed, as our goal was to provide descriptive evidence on the comparative importance of different, hierarchically nested units of analysis as contextual sources of differences in job autonomy,

testing hypotheses about the determinants of job autonomy at different levels of analysis is beyond the scope of the present paper. However, we think that future work can easily build on our empirical framework to consider potential predictors of job autonomy at multiple hierarchical levels simultaneously. Since our analysis does not say much about within-organization individual-level variation in job autonomy, a particularly interesting direction for future work is to extend our basic empirical model and add various personal characteristics as explanatory variables. Similarly, it would of course be very interesting if we could decompose the within-organization individual-level variation in our analysis further and assess how much of this variation can be attributed to the specific organization or business unit that employs the respondent (cf. Liao et al. 2009). Again, however, collecting data that are comprehensive in their cross-country and cross-industry coverage as well as containing details of individuals' employers is both time-consuming as well as incredibly expensive (cf. Wall and Wood 2005).

Implications

Following up on the above discussion of our empirical results, we find that there are two main areas for which the results of our analysis suggest important implications. The first implication concerns attempts at understanding differences in job autonomy, notably in international HRM. The second implication concerns the concept of inter-country distance, notably the way in which this concept has been applied in international business and cross-cultural management at large, which is as a master metaphor or theoretical lens (Ghemawat 2001; Eden and Miller 2004; Zaheer, Schomaker and Nachum 2012; Hutzschenreuter, Kleindienst and Lange 2015).

Where to look for understanding differences in job autonomy?

While the value of multilevel research for international HRM is increasingly recognized (Delbridge, Hauptmeier and Sengupta 2011; Sheehan and Sparrow 2012), in the literature, an open issue remains as to the comparative importance of different levels of analysis as contextual sources of variation in relevant phenomena (Wright and Van de Voorde 2009; Björkman and Welch 2015). An important contribution of our analysis subsequently is that it provides guidance for researchers thinking about which units of analysis are comparatively more important and which units of analysis are comparatively less important for understanding differences in job autonomy. Specifically, our results indicate a clear direction for future research that seeks to study contextual rather than organization-level variation in international HRM as per Delbridge, Hauptmeier and Sengupta (2011), which is to start considering industry context, as studying industry context offers researchers most potential when it comes to understanding differences in job autonomy, more so than either country or supranational context. Accordingly, we find that our multilevel evidence can be seen to imply a partial reorientation of international HRM, as until now country has been the natural focal point for research in the field (cf. Schuler, Budhwar and Florkowski 2002; Boddewyn, Toyne and Martinez 2004; Dowling and Welch 2004), while the role of industry has received comparatively little attention.

Importantly, paying more attention to the role of industry in (international) HRM would itself benefit from a more fine-grained, meso-level application of some theories of contextual influences on organizations and their workplace practices. As is, the SSD framework, for instance, seems very much geared towards understanding inter-cluster and, especially, inter-country variation but not inter-industry variation. Structural contingency theory, on the other hand, seems more flexible in terms of the units of analysis to which it can be applied. In fact, some of the influences affecting organizations' adoption of specific workplace practices emphasized by (structural) contingency theory, not least technology, can be easily recognized

for having a unique ability to transcend national borders and affect industries worldwide, regardless of the (country- or cluster-specific) formal and informal institutional arrangements under which these industries operate.

Meanwhile, whereas the above call for more focus on inter-industry variation resonates with important open questions concerning multilevel research in international HRM, we think that the relevance of the insight reflected by this implication extends beyond academia strictly. In short, we find that information on where to look for differences in job autonomy is of benefit to anyone with a professional interest in workplace practices; a simple example would be an HR consultant who is redesigning the workplace practices for an organization and is wondering about the relative importance of the different contingencies to which he or she needs to find a fit.

Beyond inter-country distance: Towards an agency-based similarities perspective in international business and cross-cultural management

A common proposition in the ICV-BCV literature is that the importance of ICV vis-à-vis BCV invalidates standard indexes of inter-country distance, specifically cultural distance, so that their use should be abandoned (Shenkar 2001; Tung and Verbeke 2010). To discuss the second implication of our finding that dissimilarities in job autonomy associated with crossing country borders are not exceptionally large compared to other contextual dissimilarities, we consider the concept of inter-country distance and take issue with this proposition. Our concern is that the proposition that indexes of inter-country distance (among which cultural distance (Shenkar 2001) and institutional distance (Ghemawat 2001)) are invalid when ICV is more important than BCV is too simplistic once one takes into account the additional descriptive evidence on the comparative importance of sub-national units of analysis as a source of differences in job autonomy. Specifically, we find that the result that

inter-industry dissimilarities can be substantially larger than inter-country dissimilarities does not call for an abandonment but, in fact, provides a useful basis to suggest a refinement to the way in which the idea of inter-country distance is traditionally used in international business and cross-cultural management (Ghemawat 2001; Eden and Miller 2004; Zaheer, Schomaker and Nachum 2012).

To flesh out such a refinement and argue our view, we revert to answering the basic question as to what exactly the implications are for MNEs (or other such actors) that inter-country dissimilarities can be smaller than intra-country dissimilarities. To answer this question, we subsequently build on two earlier ideas specifically concerned with the concepts of national differences in culture and inter-country distance (e.g., cultural distance) in international business and cross-cultural management. The answer that we find, in turn, helps us ascertain how the widely popular concept of inter-country distance can be refined most insightfully.

To start, the first idea that we build on is that of similarities or overlap as a substitute for dissimilarities or distance. Van Hoorn (2015a), in particular, shows how the existence of ICV as opposed to BCV implies that job autonomy (or other such measures) can exhibit a great deal of overlap between countries (see, also, Maseland 2011). What is more, reasoning in terms of similarities, ICV is recognized for implying that the workplace practices of some firms in Country A are closer to the workplace practices of some firms in Country B than they are to the workplace practices of other firms in Country A.

This insight, in turn, resonates with a second idea that we build on, which concerns the reification of cross-cultural differences in international business and cross-cultural management. McSweeney (2002, 2009), for instance, takes issue with the determinism inherent in the Hofstedeian approach of scoring countries' cultures on multiple dimensions (Hofstede 2001), after which the inter-country cultural differences implied by these scores are

taken as immutable and inescapable. Particularly, the critique is that when inter-country cultural differences become reified, relevant actors such as MNEs are denied agency. It is highly unrealistic, however, to suggest that people or firms just stand idly by while inter-country differences are sabotaging their international diversification endeavors. What is more, given the importance of ICV, it appears that in practice there is actually a lot of leeway for MNEs to deal with the dissimilarities that, on average, exist between their home country and the host countries in which they are active, not least when it comes to managing people (Bloom and Milkovich 1999; Gerhart and Fang 2005; Beugelsdijk et al. 2015).

The answer to the key question as to what exactly the implications are for MNEs that inter-country dissimilarities can be smaller than intra-country dissimilarities subsequently consists of two parts. Empirically, this finding means that there are bound to be substantial similarities between the workplace practices of the MNE and the workplace practices of certain segments in the (prospective) host country (Van Hoorn 2015a). More importantly, however, this finding means that, in principle, MNEs have an opportunity to go out and identify these segments with the aim of exploiting the found overlap, thus exercising their agency. Practically, identifying appropriate segments in the host country of course requires knowledge and the availability of non-trivial sub-national sources of variation, for example, in job autonomy (ibidem). Thus, when recruiting local employees for their subsidiary, MNEs can screen individuals, for instance, based on prior experience working in indigenous industries characterized by workplace practices similar to those of the MNE.[8] An end-result of actively identifying similarities will be that MNEs are actually able to apply some of the practices and policies that they employ in their home countries in their international diversification endeavors as well, simply because they have searched for and found the right "fit" for these practices also in their host-country environments (Bloom and Milkovich 1999). Hence, rather than adapting their workplace practices to achieve a fit with the host-country

environment, MNEs find a fit for their workplace practices within the diversity of the host-country environment.

<< Insert Table 7 near here >>

Some more detailed evidence on inter-industry and inter-country dissimilarities in job autonomy helps illustrate the above answer, which we label an agency-based similarities perspective on inter-country distance. For this evidence, we limit ourselves to two countries—Germany as an archetypical developed economy and Russia as one of the BRIC countries—and two industries (*Manufacture of textiles* and *Research and development, basic research*), all taken from the ESS sample that we analyzed earlier. We place the country-industry combinations in a 2x2 matrix and calculate the various overlaps in job autonomy between countries and industries. Table 7 presents the results.

Matching the perspective sketched above, the key finding is that job autonomy can indeed exhibit substantially stronger similarities across certain segments of countries, specifically certain industries (83.6% overlap and 75.6% overlap respectively), than across countries as a whole (69.6% overlap). In fact, in our illustration, job autonomy exhibits much stronger similarities across countries but within industries (83.6% overlap and 75.6% overlap) than across industries but within countries (44.1% overlap and 47.3% overlap respectively).[9] Hence, this detailed evidence shows even clearer than before how much the relevant "distances" faced by MNEs get misrepresented if we focus on inter-country dissimilarities only and neglect ICV and the potential for similarities between home countries and host countries that ICV implies.

Finally, as a last remark, let us emphasize that, while we intend the agency-based similarities perspective on inter-country distance sketched above mainly as a conceptual

contribution to international business and cross-cultural management research, the underlying arguments reflect important practical implications of the findings of our analysis. Indeed, we think that MNE managers can benefit greatly from potential similarities in workplace practices, as these can help them establish a proper fit between their international diversification endeavors and the environments that are host to these endeavors (cf. Bloom and Milkovich 1999). In addition, we find that our descriptive evidence on the importance of inter-industry variation contains some more general insight as to what it means for firms to diversify and expand their activities across industries. Particularly, as alluded to in the beginning of our paper, it seems that firms should not underestimate the difficulty of *inter-industry* diversification compared to *international* diversification, as expansion towards other industries may very well require dealing with even greater challenges than does expansion towards other countries. While, for instance, the transfer of organizational practices from one context to another (cf. Kostova 1999) may be difficult in general, this difficulty—and hence the strategic importance of the decision to diversify—may be greater in case of transfer / diversification across industries than in case of transfer / diversification across countries.

Conclusion

We have studied differences in job autonomy across four levels of analysis, individuals (L1) that are nested in industries (L2) that are nested in countries (L3) that are nested in various supranational politico-institutional clusters (L4). Results show the importance of within-country or intra-country variation (ICV), specifically variation between industries. Implications of this finding concern the direction of future research on understanding differences in job autonomy as well as the natural focus on inter-country or between-country variation (BCV) in international HRM and international business and cross-cultural management more broadly. Focusing on this latter implication, we draw on our detailed

empirical evidence to propose a refinement to the way the idea of inter-country dissimilarities, i.e., inter-country distance, is traditionally used in the literature. We find that the concept of inter-country distance has gained great popularity as a master metaphor or theoretical lens in international business and cross-cultural management but that an agency-based similarities perspective as proposed by us, taking into account MNE agency and possible consequences of intra-country dissimilarities outweighing inter-country dissimilarities, may prove more illuminating.

Meanwhile, we also think that our study provides a useful empirical framework for studying variation in phenomena relevant to international HRM that comprise multiple levels of analysis. In fact, several interesting avenues for future research aimed at furthering our understanding of differences in workplace practices such as job autonomy have already presented themselves.

Appendix

Validity of the job autonomy and policy influence measures

<< Insert Table A.1 here >>

Additional information on the sample

<< Insert Tables A.2 and A.3 here >>

Notes

[1] This is not to say that exceptions to the typical study described here do not exist. Notably, Van Hoorn (2015a) estimates various three-level multilevel models, for instance, of individuals nested in subnational regions nested in countries. However, Van Hoorn (2015a) does not examine job autonomy (or any workplace practice for that matter) but people's values, and does not consider supranational cluster or industry as key contexts for HRM.

[2] To exemplify, we may note that there are fields within business and management as well academic journals specialized in the study of business activities that span across national borders but that no comparable attention exists for differences between non-country contexts, say, between industries. For instance, there is a Journal of *International* Business Studies but no Journal of *Inter-Industry* Business Studies.

[3] Concerning the institutional and cultural diversity of our sample, the countries that we consider represent seven out of the 12 main cultural clusters identified by Hofstede (2001) (see Table 1). In addition, in terms of formal or regulatory institutions, the countries included in our sample represent all five major legal systems (common law, French law, German law, socialist law, and Scandinavian law) (again see Table 1). Finally, our sample comprises diverse economies, including Germany as a manufacturing powerhouse, Sweden as a prototypical small open economy, and Poland as an important transition economy.

[4] Of course, studies that consider variation associated with supranational clusters, particularly the classification of welfare state regimes by Hall and Soskice (2001), do exist (Parry, Dickmann and Morley 2008; Richbell, Brookes, Brewster and Wood 2011; Kluike 2015). A drawback of such research, however, is that it often includes only a few countries that are considered typical representatives of the supranational clusters identified in the literature. As such, these studies do not allow properly distinguishing between genuine inter-cluster variation on the one hand and inter-country variation on the other.

[5] Conceptually, inter-country distance (e.g., cultural or institutional distance) has been identified as one of, if not the main theoretical lens or master metaphor in international business and cross-cultural management theory, meant to capture the set of challenges that MNEs and other actors face due to the extent of dissimilarity between their home-country environment and the host-country environment (Ghemawat 2001; Eden and Miller 2004; Zaheer, Schomaker and Nachum 2012; Van Hoorn and Maseland 2014; Hutzschenreuter, Kleindienst and Lange 2015). Issues that have been analyzed using the concept of inter-country distance are correspondingly broad and include such key topics in international HRM as the transfer of routines, subsidiary compensation strategies and expatriate deployment (Roth and O'Donnell 1996; Kostova 1999; Gong 2003; Colakoglu and Caligiuri 2008; Lertxundi and Landeta 2012).

[6] Thus, while it is not uncommon to make a distinction between cultural contingencies and structural/institutional contingencies (e.g., Aycan 2005), in the institutional literature, culture is actually seen as one of the key institutions in a society (e.g., Williamson 2000).

[7] For such research, employees and managers of organizations that perform poorly might be more inclined to describe the workplace practices in their organizations in an unfavorable way and vice versa.

[8] To be sure, the indigenous industry that is closest to the MNE in terms of workplace practices need not be the same industry as the industry in which the MNE operates.

[9] As this example is highly stylized, neither of the two selected industries should be seen as representative of the

average level of job autonomy in the two countries. Similarly, the evidence presented in Table 7 is not novel empirical evidence, but merely a different way of presenting the key finding of our main analysis that inter-industry variation appears a more important source of differences in job autonomy than is inter-country variation.

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Table 1. Variable description and summary statistics.

Variable	Description	Mean and standard deviation
Dependent variables		
Job autonomy [N_{L1} = 138,445]	Measured as the answer to the item asking respondents "how much the management at your work allows/allowed you to decide how your own daily work is/was *organised*?" Answers are coded on a 0-10 Likert-type scale. In the first wave of the ESS, this item referred only to the present tense ("allows" and "is") and not to the past tense ("allowed" and "was").	5.96 (3.54)
Policy influence [N_{L1} = 119,932]	Measured as the answer to the item asking respondents "how much the management at your work allows/allowed you to influence policy decisions about the activities of the *organisation*?" Answers are coded on a 0-10 Likert-type scale. This item has not been included in the first wave of the ESS and hence the relatively low number of individual-level observations compared to the item measuring job autonomy.	3.91 (3.63)
Autonomy-influence index [N_{L1} = 119,734]	Factor combining individuals' scores on the job autonomy item and the policy influence item (see above) in a single index (Cronbach's alpha = 0.789).	0.00 (1.00)
Independent variables		
Cultural cluster [N_{L4} = 8]	Hofstede (2001, p. 62) discerns twelve cultural clusters, seven of which are present in our sample. Our sample further comprises countries not covered by Hofstede's (2001) cluster classification, e.g., Russia and Ukraine, and we classify these countries together in an eighth cluster.	Not applicable
Legal tradition [N_{L4} = 5]	The literature on legal traditions discerns five traditions, common law, French law, German law, socialist law, and Scandinavian law (where the last four are all considered part of the civil law tradition). We use data from Botero et al. (2004) to classify the countries in our sample as belonging to one of these traditions. Common law countries in our sample are the U.K., Ireland, and Israel. French law countries in our sample are Belgium, Spain, France, Greece, Italy, Luxembourg, Netherlands, Portugal, and Turkey. German law countries in our sample are Austria, Switzerland, and Germany. Socialist law countries in our sample are Bulgaria, Czech Republic, Estonia, Croatia, Hungary, Poland, Russia, Slovenia, Slovakia, and Ukraine. Finally, Scandinavian law countries in our sample are Denmark, Finland, Norway, and Sweden.	Not applicable

Table 1, continued.

Variable	Description	Mean and standard deviation
Independent variables		
Variety of capitalism [$N_{L4} = 4$]	Esping-Andersen (1990) discerns three types of capitalism or welfare states: liberal welfare states (U.K. and Ireland), conservative/corporatist welfare states (Switzerland, Germany, Finland, France, and Italy), and social-democratic welfare states (Austria, Belgium, Denmark, Netherlands, Norway, and Sweden). We use these three cluster classifications, adding a fourth cluster for countries not covered by Esping-Andersen's (1990) classification, e.g., Russia.	Not applicable
Country [$N_{L3} = 30$]	The ESS interviews respondents from a variety of Eurasian countries and we take respondents' country as the second highest level of analysis in our multilevel model (L2).	Not applicable
Industry	The ESS classifies respondents as belonging to one out of 62 industries, using two-digit NACE codes to discern the industries. In the analysis we cross-classify industries as nested in countries, which gives about 1700 unique country-industry combinations (N_{L2}), where the exact number of cross-classified industries depends on the dependent variable considered in the analysis. The maximum number of country-industry combinations is given by the number of industries multiplied by the number of countries in the sample: 62 x 30 = 1860.	Not applicable

Notes: Number of observations per contextual unit of analysis in square brackets, if applicable. Table A.2 in the appendix lists all countries in the sample and their mean scores on the job autonomy and policy influence measures. Table A.3 in the appendix lists all industries in the sample and their mean scores on the job autonomy and policy influence measures.

Table 2. Variation in job autonomy across different supra-national clusters and other units of analysis.

Type of supra-national cluster	Contextual unit of analysis	Variance component	Percentage of total variation between units
Cultural clusters [$N_{L4} = 8$]	4 – Cultural clusters	0.300 (0.225)	2.39%
	3 – Countries within cultural clusters	0.235* (0.119)	1.87%
	2 – Industries cross-classified within countries within cultural clusters	0.608*** (0.080)	4.84%
Legal traditions [$N_{L4} = 5$]	4 – Legal traditions	0.634 (0.421)	5.01%
	3 – Countries within legal traditions	0.027 (0.045)	0.21%
	2 – Industries cross-classified within countries within legal traditions	0.587*** (0.077)	4.64%
Varieties of capitalism [$N_{L4} = 4$]	4 – Varieties of capitalism	0.346 (0.308)	2.74%
	3 – Countries within varieties of capitalism	0.277* (0.120)	2.20%
	2 – Industries cross-classified within countries within varieties of capitalism	0.590*** (0.078)	4.68%

Notes: Dependent variable is job autonomy (0-10). Data concern N_{L1} = 138,445 individuals that are nested in N_{L2} = 1717 cross-classified industries that are nested in N_{L3} = 30 countries. Number of supra-national clusters in square brackets. Standard errors in parentheses.
* denotes statistical significance at the 5% level (one-tailed).
*** denotes statistical significance at the 0.1% level (one-tailed).

Table 3a. Robustness check: Multilevel sources of variation in policy influence at the workplace.

Type of supra-national cluster	Contextual unit of analysis	Variance component	Percentage of total variation between units
Cultural clusters [$N_{L4} = 8$]	4 – Cultural clusters	0.280 (0.238)	2.08%
	3 – Countries within cultural clusters	0.334* (0.160)	2.47%
	2 – Industries cross-classified within countries within cultural clusters	0.753*** (0.100)	5.58%
Legal traditions [$N_{L4} = 5$]	4 – Legal traditions	0.654 (0.442)	4.82%
	3 – Countries within legal traditions	0.055 (0.063)	0.41%
	2 – Industries cross-classified within countries within legal traditions	0.731*** (0.096)	5.39%
Varieties of capitalism [$N_{L4} = 4$]	4 – Varieties of capitalism	0.173 (0.216)	1.27%
	3 – Countries within varieties of capitalism	0.591** (0.220)	4.33%
	2 – Industries cross-classified within countries within varieties of capitalism	0.747*** (0.099)	5.48%

Notes: See Table 2. Dependent variable is policy influence (0-10). Data concern N_{L1} = 119,932 individuals that are nested in N_{L2} = 1706 cross-classified industries that are nested in N_{L3} = 30 countries. Standard errors in parentheses.
* denotes statistical significance at the 5% level (one-tailed).
** denotes statistical significance at the 1% level (one-tailed).
*** denotes statistical significance at the 0.1% level (one-tailed).

Table 3b. Robustness check: Multilevel sources of variation in the autonomy-influence index.

Type of supra-national cluster	Contextual unit of analysis	Variance component	Percentage of total variation between units
Cultural clusters [$N_{L4} = 8$]	4 – Cultural clusters	0.0254 (0.0197)	2.52%
	3 – Countries within cultural clusters	0.0213* (0.0111)	2.11%
	2 – Industries cross-classified within countries within cultural clusters	0.0604*** (0.0079)	5.99%
Legal traditions [$N_{L4} = 5$]	4 – Legal traditions	0.0611 (0.0400)	5.99%
	3 – Countries within legal traditions	0.0000 (0.0000)	0.00%
	2 – Industries cross-classified within countries within legal traditions	0.0557*** (0.0067)	5.46%
Varieties of capitalism [$N_{L4} = 4$]	4 – Varieties of capitalism	0.0247 (0.0243)	2.41%
	3 – Countries within varieties of capitalism	0.0353** (0.0142)	3.46%
	2 – Industries cross-classified within countries within varieties of capitalism	0.0592 (0.0078)	5.79%

Notes: See Table 3a. Dependent variable is the two-item measure that combines the measure of job autonomy and the measure of policy influence into a single index. Data concern N_{L1} = 119,734 individuals that are nested in N_{L2} = 1706 cross-classified industries that are nested in N_{L3} = 30 countries. Standard errors in parentheses.
* denotes statistical significance at the 5% level (one-tailed).
** denotes statistical significance at the 1% level (one-tailed).
*** denotes statistical significance at the 0.1% level (one-tailed).

Table 4. Robustness check: Variation in job autonomy across units of analysis with at least 1000 observations per industry.

Type of supra-national cluster	Contextual unit of analysis	Variance component	Percentage of total variation between units
Cultural clusters [$N_{L4} = 8$]	4 – Cultural clusters	0.325 (0.242)	2.58%
	3 – Countries within cultural clusters	0.252* (0.126)	2.00%
	2 – Industries cross-classified within countries within cultural clusters	0.594*** (0.081)	4.72%
Legal traditions [$N_{L4} = 5$]	4 – Legal traditions	0.644 (0.431)	5.08%
	3 – Countries within legal traditions	0.048 (0.053	0.37%
	2 – Industries cross-classified within countries within legal traditions	0.573*** (0.077)	4.52%
Varieties of capitalism [$N_{L4} = 4$]	4 – Varieties of capitalism	0.366 (0.325)	2.89%
	3 – Countries within varieties of capitalism	0.290* (0.125)	2.29%
	2 – Industries cross-classified within countries within varieties of capitalism	0.578*** (0.079)	4.57%

Notes: See Table 2. Dependent variable is job autonomy (0-10). Data concern N_{L1} = 127,874 individuals that are nested in N_{L2} = 1016 cross-classified industries that are nested in N_{L3} = 30 countries. Standard errors in parentheses.
* denotes statistical significance at the 5% level (one-tailed).
*** denotes statistical significance at the 0.1% level (one-tailed).

Table 5. Robustness check: Inter-country and inter-industry variation at comparable levels of analysis.

Type of supra-national cluster (L3)	Variation between industries (L2)		Variation between countries (L2)	
	Variance component	Percentage of total variation	Variance component	Percentage of total variation
Cultural clusters	0.751*** (0.061)	6.00%	0.463** (0.140)	3.72%
Legal traditions	0.706*** (0.067)	5.59%	0.178*** (0.051)	1.43%
Varieties of capitalism	0.760*** (0.079)	6.03%	0.374*** (0.105)	3.01%

Notes: See Table 2. Dependent variable is job autonomy (0-10). Models concern individuals (L1) within industries (L2) that are cross-classified within supra-national clusters (L3), and individuals (L1) within countries (L2) within supra-national clusters (L3) respectively. Standard errors in parentheses.

** denotes statistical significance at the 1% level (one-tailed).

*** denotes statistical significance at the 0.1% level (one-tailed).

Table 6. Robustness check: Variation in job autonomy with period effects (year of observation) controlled for.

Type of supra-national cluster	Contextual unit of analysis	Variance component	Percentage of total variation between units
Cultural clusters [$N_{L4} = 8$]	4 – Cultural clusters	0.297 (0.223)	2.36%
	3 – Countries within cultural clusters	0.234* (0.119)	1.86%
	2 – Industries cross-classified within countries within cultural clusters	0.610*** (0.081)	4.86%
Legal traditions [$N_{L4} = 5$]	4 – Legal traditions	0.629 (0.418)	4.97%
	3 – Countries within legal traditions	0.029 (0.046)	0.23%
	2 – Industries cross-classified within countries within legal traditions	0.589*** (0.077)	4.65%
Varieties of capitalism [$N_{L4} = 4$]	4 – Varieties of capitalism	0.345 (0.306)	2.73%
	3 – Countries within varieties of capitalism	0.271* (0.119)	2.15%
	2 – Industries cross-classified within countries within varieties of capitalism	0.593*** (0.079)	4.70%

Notes: See Table 2. Dependent variable is job autonomy (0-10) with period effects controlled for. Data concern N_{L1} = 138,445 individuals that are nested in N_{L2} = 1717 cross-classified industries that are nested in N_{L3} = 30 countries. Number of supra-national clusters in square brackets. Standard errors in parentheses.
* denotes statistical significance at the 5% level (one-tailed).
*** denotes statistical significance at the 0.1% level (one-tailed).

Table 7. Inter-country and inter-industry similarities for selected industries in Russia and Germany.

	Inter-country, intra-industry overlap: **83.6%** ($n_1 = 65$; $n_2 = 49$)		
Inter-industry, intra-country overlap: **44.1%** ($n_1 = 65$; $n_2 = 62$)	Mean job autonomy in *Manufacture of textiles* industry in Germany: 4.08 (SD = 3.75; n = 65)	Mean job autonomy in *Manufacture of textiles* industry in Russia: 3.24 (SD = 3.67; n = 49)	Inter-industry, intra-country overlap: **47.3%** ($n_1 = 49$; $n_2 = 36$)
	Mean job autonomy in *Research and development, basic research* industry in Germany: 7.44 (SD = 2.63; n = 62)	Mean job autonomy in *Research and development, basic research* industry in Russia: 6.44 (SD = 3.18; n = 36)	
	Inter-country, intra-industry overlap: **75.6%** ($n_1 = 62$; $n_2 = 36$)		

Notes: Following Van Hoorn (2015a), percentage overlap is calculated using Cohen's u (Cohen 1988). Note, though, that strictly speaking Cohen's u is a measure of the percentage non-overlap between two statistical contributions, so that we still need to subtract the score on Cohen's u from 1 to get to measured similarities or overlap. Inter-country overlap between Germany and Russia across all industries equals **69.6%** ($n_1 = 8830$; $n_2 = 4223$). See Tables A.2 and A.3.

Table A.1. Validity of the job autonomy and policy influence measures.

Variable	Mean job autonomy, 0-10	Mean policy influence, 0-10
Years of education		
Lowest quintile (6.08 years on average)	4.77 [21,317] (3.88)	3.26 [19,745] (3.75)
Second quintile (10.2 years on average)	5.39 [32,832] (3.69)	3.30 [28,695] (3.58)
Third quintile (12.0 years on average)	5.69 [21,830] (3.56)	3.60 [18,678] (3.58)
Fourth quintile (13.9 years on average)	6.40 [33,047] (3.28)	4.16 [28,096] (3.53)
Highest quintile (17.9 years on average)	7.26 [28,313] (2.81)	5.17 [23,782] (3.38)
Experience working for current employer in years		
Lowest quintile (0.312 years on average)	5.53 [3388] (3.48)	3.24 [3365] (3.21)
Second quintile (3.01 years on average)	5.94 [3799] (3.36)	3.61 [3785] (3.23)
Third quintile (6.28 years on average)	6.21 [2908] (3.29)	3.89 [2891] (3.28)
Fourth quintile (12.5 years on average)	6.32 [3647] (3.24)	3.93 [3633] (3.29)
Highest quintile (26.0 years on average)	6.57 [3503] (3.20)	4.21 [3487] (3.34)

Notes: See Table 1. Standard deviations in parentheses. Number of observations in square brackets. Experience working for current employer is calculated by detracting the year in which the respondent started working for his/her current employer from the year of the survey. The item asking respondents about starting working for their current employer has not been included in Waves 1, 3 and 4 of the ESS.

Table A.2. Countries in the sample and their scores on autonomy at the workplace.

Country [N_{L3} = 30]	Job autonomy, 0-10	Policy influence, 0-10
Austria	6.12 [4996] (3.40)	3.80 [3889] (3.54)
Belgium	6.41 [5363] (3.43)	(4.02 [4575] (3.67)
Bulgaria	5.02 [3101] (3.85)	2.41 [3053] (3.41)
Switzerland	6.68 [6231] (3.22)	4.14 [5148] (3.67)
Cyprus	6.19 [1812] (3.68)	3.68 [1800] (3.90)
Czech Republic	4.34 [4648] (3.59)	2.65 [3877] (3.34)
Germany	6.07 [8830] (3.41)	3.38 [7548] (3.60)
Denmark	7.33 [5004] (2.84)	4.88 [4128] (3.54)
Estonia	5.28 [4287] (3.57)	2.62 [4190] (3.16)
Spain	5.85 [5480] (3.53)	4.40 [4855] (3.71)
Finland	7.16 [6545] (2.83)	5.01 [5579] (3.41)
France	6.68 [6026] (3.17)	4.56 [5347] (3.55)
United Kingdom	6.56 [7138] (3.25)	4.28 [6144] (3.48)
Greece	5.55 [4218] (3.96)	4.76 [3586] (4.15)
Croatia	4.47 [871] (3.72)	2.65 [867] (3.34)

Table A.2., continued.

Country	Job autonomy, 0-10	Policy influence, 0-10
Hungary	4.21 [2647] (3.79)	2.54 [2636] (3.36)
Ireland	5.77 [6000] (3.65)	4.03 [5114] (3.69)
Israel	6.24 [3064] (3.48)	5.42 [2005] (3.51)
Italy	5.84 [1385] (3.62)	5.19 [989] (3.83)
Luxembourg	5.49 [1895] (3.98)	3.12 [1348] (3.87)
Netherlands	6.50 [6329] (3.17)	4.33 [5124] (3.51)
Norway	7.28 [6029] (2.77)	5.67 [4781] (3.15)
Poland	5.01 [4978] (3.85)	3.30 [4273] (3.79)
Portugal	5.50 [5883] (3.33)	4.28 [5292] (3.47)
Russia	4.50 [4223] (3.63)	2.68 [4204] (3.15)
Sweden	7.49 [6379] (2.70)	4.87 [5245] (3.33)
Slovenia	5.57 [4020] (3.70)	3.60 [3348] (3.44)
Slovakia	4.44 [4135] (3.71)	2.57 [4122] (3.26)
Turkey	5.30 [1824] (3.85)	4.10 [1784] (3.92)
Ukraine	4.44 [5104] (3.73)	2.79 [5081] (3.33)

Table A.2., continued.

Country	Job autonomy, 0-10	Policy influence, 0-10
Whole sample	5.96 [138,445] (3.54)	3.91 [119,932] (3.63)

Notes: Standard deviations in parentheses. Number of observations in square brackets.

Table A.3. Industries in the sample and their scores on autonomy at the workplace.

Industry, NACE rev. 1.1	Job autonomy	Policy influence
Agriculture, hunting and related service activities	5.88 [6958] (4.03)	4.95 [6664] (4.27)
Forestry, logging and related service activities	5.61 [607] (3.81)	3.63 [561] (3.69)
Fishing, fish farming and related service activities	6.03 [230] (3.80)	4.70 [213] (4.00)
Mining of coal and lignite; extraction of peat	3.91 [480] (3.59)	2.01 [444] (2.83)
Extraction of crude petroleum and natural gas	6.23 [309] (3.31)	3.97 [255] (3.31)
Mining of uranium and thorium ores	4.29 [21] (3.41)	1.95 [20] (3.30)
Mining of metal ores	4.35 [103] (3.47)	2.70 [96] (3.21)
Other mining and quarrying	5.06 [217] (3.88)	2.67 [198] (3.33)
Manufacture of food products and beverages	4.74 [3760] (3.77)	2.92 [3310] (3.42)
Manufacture of tobacco products	4.20 [107] (3.83)	2.26 [103] (3.07)
Manufacture of textiles	3.83 [1710] (3.64)	2.30 [1561] (3.15)
Manufacture of wearing apparel; dressing and dyeing fur	3.97 [1952] (3.87)	2.54 [1843] (3.51)
Tanning and dressing of leather	4.08 [484] (3.72)	2.70 [454] (3.39)
Manufacture of wood and products of wood and cork, except furniture	4.79 [1080] (3.71)	3.09 [951] (3.48)
Manufacture of pulp, paper and paper products	5.10 [610] (3.56)	2.78 [509] (3.03)

Table A.3, continued.

Industry, NACE rev. 1.1	Job autonomy	Policy influence
Publishing, printing and reproduction of recorded media	6.42 [1305] (3.33)	4.01 [1119] (3.56)
Manufacture of coke, refined petroleum products and nuclear fuel	6.09 [146] (3.34)	3.42 [131] (3.08)
Manufacture of chemicals and chemical products	5.85 [1502] (3.49)	3.13 [1264] (3.23)
Manufacture of rubber and plastic products	4.71 [897] (3.69)	2.60 [740] (3.21)
Manufacture of other non-metallic mineral prod	4.74 [1049] (3.70)	2.90 [921] (3.36)
Manufacture of basic metals	4.78 [1222] (3.67)	2.77 [1073] (3.29)
Manufacture of fabricated metal products, except machinery and equipment	5.11 [1811] (3.66)	3.08 [1554] (3.43)
Manufacture of machinery and equipment not elsewhere classified	5.29 [2680] (3.55)	3.02 [2356] (3.27)
Manufacture of office machinery and computers	6.27 [201] (3.29)	3.61 [164] (3.30)
Manufacture of electrical machinery and apparatus	5.12 [1096] (3.59)	2.88 [951] (3.27)
Manufacture of radio, television and communication equipment and apparatus	5.63 [647] (3.60)	3.08 [555] (3.26)
Manufacture of medical, precision and optical instruments, watches and clocks	6.58 [562] (3.40)	3.75 [475] (3.47)
Manufacture motor vehicles, trailers and semi-trailers	5.08 [1178] (3.57)	2.76 [988] (3.13)
Manufacture of other transport equipment	5.83 [715] (3.42)	3.35 [630] (3.23)
Manufacture of furniture; manufacturing not elsewhere classified	5.35 [1493] (3.69)	3.61 [1354] (3.67)

Table A.3, continued.

Industry, NACE rev. 1.1	Job autonomy	Policy influence
Recycling	5.71 [120] (3.88)	3.91 [100] (3.93)
Electricity, gas, steam and hot water supply	6.22 [1342] (3.25)	3.40 [1159] (3.34)
Collection, purification and distribution of water	6.14 [235] (3.42)	3.41 [210] (3.49)
Construction	5.74 [9807] (3.62)	4.00 [8595] (3.75)
Sale, maintenance and repair of motor vehicles and motorcycles	6.35 [2075] (3.37)	4.59 [1765] (3.71)
Wholesale trade, commercial trade, except of motor vehicles and motorcycles	6.90 [2956] (3.23)	4.69 [2505] (3.62)
Retail trade, except of motor vehicles and motorcycles	5.84 [12,537] (3.64)	4.09 [11,065] (3.85)
Hotels and restaurants	5.47 [5868] (3.68)	3.80 [5277] (3.75)
Land transport; transport via pipelines	5.11 [4212] (3.72)	3.34 [3711] (3.57)
Water transport	6.33 [408] (3.49)	3.96 [354] (3.51)
Air transport	5.73 [453] (3.38)	3.41 [377] (3.18)
Supporting and auxiliary transportation activities; activities of travel agencies	5.76 [1305] (3.55)	3.55 [1116] (3.51)
Post and telecommunications	5.56 [2262] (3.46)	3.00 [1915] (3.14)
Financial intermediation, except insurance and pension funding	6.58 [2478] (3.03)	3.83 [2055] (3.33)
Insurance and pension funding, except compulsory social security	7.25 [1080] (2.78)	4.18 [878] (3.38)

Table A.3, continued.

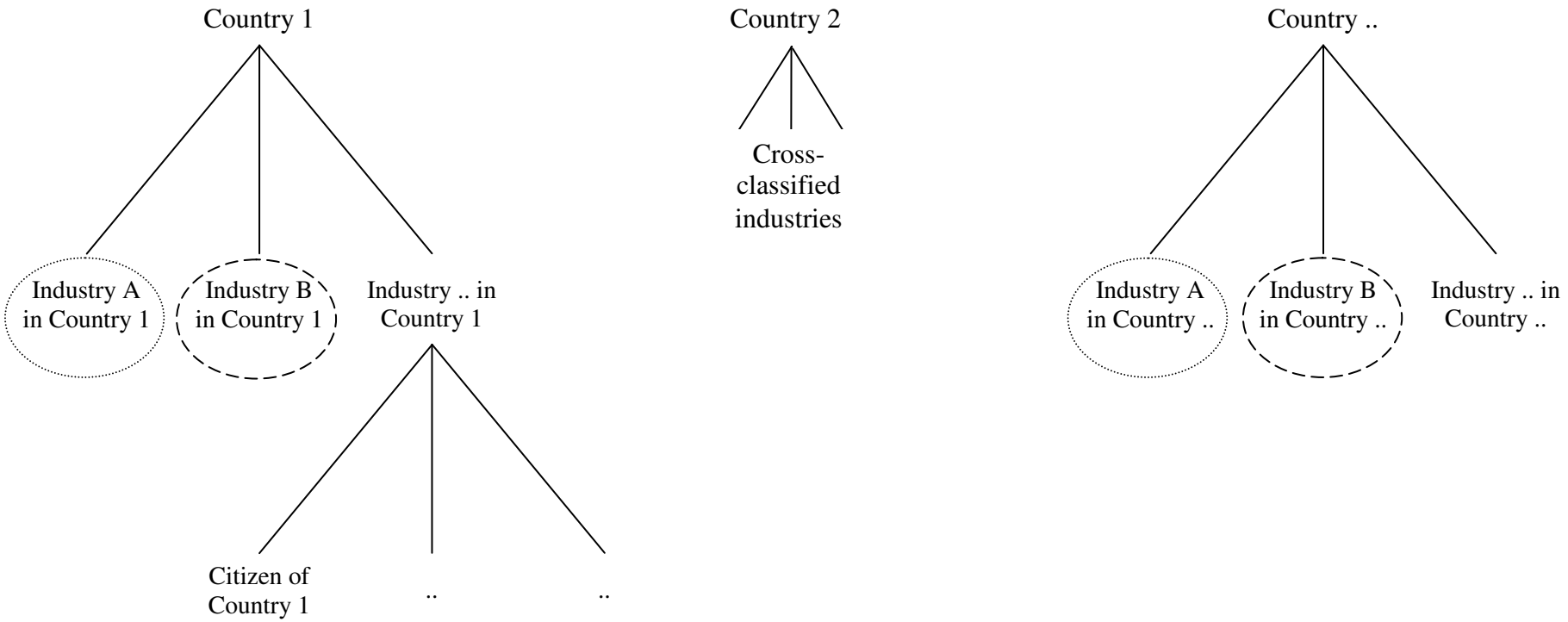
Industry, NACE rev. 1.1	Job autonomy	Policy influence
Activities auxiliary to financial intermediation	7.24 [486] (2.91)	4.50 [424] (3.55)
Real estate activities	7.34 [1033] (3.09)	5.01 [915] (3.78)
Renting of machinery and equipment without operator and of personal and household goods	6.87 [151] (3.10)	4.71 [127] (3.72)
Computer and related activities	7.50 [1525] (2.57)	5.00 [1232] (3.37)
Research and development, basic research	7.53 [737] (2.65)	4.43 [585] (3.38)
Other business activities	6.66 [7629] (3.30)	4.43 [6559] (3.68)
Public administration and defence; compulsory social security	6.35 [8848] (3.23)	3.81 [7380] (3.34)
Education	6.73 [11,911] (3.06)	4.45 [9983] (3.26)
Health and social work	6.27 [14,124] (3.21)	4.03 [11,814] (3.40)
Sewage and refuse disposal, sanitation and similar activities	5.34 [542] (3.84)	3.13 [417] (3.46)
Activities of membership organizations not elsewhere classified	7.65 [821] (2.79)	5.02 [686] (3.56)
Recreational, cultural and sporting activities	6.80 [2795] (3.29)	4.91 [2450] (3.72)
Other service activities	5.90 [4064] (3.72)	4.09 [3539] (3.95)
Private households with employed persons	5.75 [1227] (3.58)	3.29 [1055] (3.54)
Goods producing, private households for own use	7.84 [32] (3.27)	7.06 [31] (3.85)

Table A.3, continued.

Industry, NACE rev. 1.1	Job autonomy	Policy influence
Services producing, private households for own use	5.99 [141] (3.76)	4.42 [138] (4.07)
Extra-territorial organizations and bodies	6.53 [109] (3.32)	4.41 [58] (3.62)
Whole sample	5.96 [138,445] (3.54)	3.91 [119,932] (3.63)

Notes: Standard deviations in parentheses. Number of observations in square brackets.

Figure 1. Industries cross-classified within countries.



Notes: Practically, the cross-classification of industries within countries is achieved by creating a numerical code that captures, first, the individual's country and, second, the individual's industry (see, also, Table 1).