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Multi-Level Issues in International HRM: Mean Differences, Explained Variance, and Moderated Relationships

Abstract
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Keywords
human resource systems, international HRM, HR practices, outcomes

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research available to others interested in preliminary form to encourage discussion and suggestions.

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Abstract

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Multi-Level Issues in International HRM: Mean Differences, Explained Variance, and Moderated Relationships

Introduction

Assume the following case. A large multinational organization decides to implement a pay for performance system, complete with forced distribution rankings and large merit pay increase differences across performance categories as part of its effort to build a "performance-based culture." Resident cross-cultural experts warn against such an approach because they argue that in collectivist cultures such as China, individualistic-based HR practices such as this simply will not work, and in fact may actually result in lower, rather than higher performance. Such warning shows great consistency with what Hofstede wrote when he stated:

"In the management literature there are numerous unquestioning extrapolations of organizational solutions beyond the border of the country in which they were developed. This is especially true for the exportation of management theories from the United States to the rest of the world, for which the non-US importers are at least as responsible as the US exporters…However the empirical basis for American management theories is American organizations; and we should not assume without proof that they apply elsewhere." (Hofstede, 1980, p. 373).

Such admonitions have been repeated over the years to the point that multinational firms should be paralyzed with fear of exporting their HRM systems, and incurring significant costs by developing customized HR systems for every different country or locale. Similarly, cross-cultural researchers have made a living out of studying the varieties of HR systems and approaches that exist across different countries and regions.

While neither denying that differences in HR systems exist, nor that some of the variety of practices is due to real differences across countries, we will attempt to dissect the issue of International HRM using ideas, concepts, and models emerging from multilevel theory and research. We posit that three ideas are critical to this line of research: Mean differences in the use of HR practices across countries, the amount of variance in HR practices that is explained

by countries, and the extent to which countries (or specifically culture) moderates the relationships between HR practices and outcomes. Our conclusion is that these differences may not be as large as we think they are, and may in fact be due less to differences in culture and more to differences in institutional contexts.

The Concept of Variance

The concept of variation, or variance, is central to all scientific endeavors. The scientific research process first assumes that variance exists in one or more variables, and second aims at understanding and/or explaining this variation (Kerlinger, 1973). For instance, Nunnaly and Bernstein (1994) stated that "One might say that scientific issues are posed only to the extent that they vary with respect to particular attributes…The purpose of a scientific theory is to explain as much variation of interrelated variables as possible" (p. 116). In the context of Strategic International HRM research, we first assume that variation or variance in HR practices exists across different cultural or country contexts. This is an assumption based in empirical data, most significantly that provided by Brewster and his colleagues (1999; 2003, 2005) and consequently is neither innovative nor profound. However, this first issue deals with the extent to which mean differences in the use of practices are observed across countries.

Second, even when mean differences are observed, it is important to understand the extent to which the total variance in HR practices is explained by country or culture. With large sample sizes, even small differences in means may have statistically significant results, yet little of the variance in practices is explained by country.

Finally, the fact that different countries tend to use practices to a different extent may not necessarily mean that those practices are not best practices. The most important question deals with the extent to which the relationship between practices and some important outcomes (e.g., turnover, climate, or firm performance) differ across countries.

The purpose of this chapter is to use recent developments in multilevel research to examine the concepts of mean differences, explained variance, and moderation within the

international HRM literature. To begin this analysis, we briefly review some of the major findings with regard to International HRM practices.

Research on Variance in HR Practices across Countries

It is not our intention to review the extensive literature on International HRM, but we refer to some work for illustrative purposes. In line with our ideas we will discuss studies showing variance in HR practices across countries, studies showing covariance between culture and HR practices and studies showing interaction effects of culture, additionally the studies are situated at different levels of analysis.

The Cranet project addresses the issue of national differences in HR policies and practices across countries. Survey data from 1999 and 2000 indicate that variance in HR practices such as recruitment and selection methods, pay systems, and communication exists across different country contexts (Harris, Brewster & Sparrow, 2003). Mayrhofer and Brewster (2005) concluded using Cranet data from a period of 15 years that there are still significant differences between European countries in the usage of HR practices. In the beginning of the 90's European countries converged, however between the mid -90's and the end of the 90's the heterogeneity of HR practices in Europe increased again.

Jackson (2002) addresses the question of whether the way value is attached to people manifesting and represented in HR policies and practices in organizations differs across countries. Results of an explorative study in seven countries indicate that cultural factors (like individualism vs. collectivism), the level of industrial development of a country, and the nature of cultural interactions influence management perceptions of the value of people in organizations.

Based on studies described above, we can conclude that HRM practices and possibly their impact vary across countries. However, the majority of studies in the International HRM literature attribute the observed country differences ex post to cultural factors, but they do not make any distinction between cultural, institutional or structural explanations a priori (Aycan,

2005; Tayeb, 1994; Clark, Gospel & Montgomery, 1999). In the next section we will discuss some studies showing covariance between national culture and HR practices.

Papalexandris and Panayotopoulou (2004) investigated the relationship between nine dimensions of societal culture as revealed by the GLOBE study and HR practices gathered through the Cranet research project in 19 European countries. They found that the HR practice internal communication was most strongly related to societal culture (for example ingroup collectivism is negatively related to all methods of upward and downward communication), and reward management practices were least related to societal culture. Looking at the results of a study comparing HR compensation practices in 24 countries, three datasets suggest that national culture provides an important explanation for variance in the utilization of different compensation practices in different countries (Schuler & Rogovsky, 1998). Newman and Nollen (1996) also investigated interactions between HR practices and cultures. In a study among European and Asian work units of one multinational company they concluded that business performance is better when management practices are congruent with national culture. For example in collectivist cultures performance was higher in work units with less individual employee emphasis, whereas in individualist cultures performance was higher in work units where management emphasized employee contribution. The above three studies relied on nation as a proxy for measuring culture, without directly measuring national culture.

Another discipline of international HR research examines HR from a managerial perspective. Budhwar and Sparrow (2002) examined the influence of national culture on managerial thinking regarding the strategic management of human resources amongst a sample of 48 Indian and British HR specialists in the manufacturing sector. They concluded that although managerial thinking with regard to the importance of integrating HRM into business and corporate strategy and the devolution of HRM to line managers rather than to HR specialists is converging, there is still strong divergence in managerial thinking about HRM practices. Aycan, Kanungo, Mendonca, Yu, Deller, Stahl and Kurshid (2000) also investigated

managerial beliefs and assumptions. In their model the socio-cultural context (paternalism, power distance, fatalism and loyalty towards community) influences HRM practices via managerial assumptions about the nature of their employees. Support for their model was found using managers in 10 countries. For example in high power distance and paternalistic cultural contexts, managers assumed employee reactivity and this assumption resulted in lower job enrichment and empowerment.

The literature on relationships between culture and HRM practices in different countries and the literature on relationships between managerial perceptions in different cultures has investigated the effect of HR practices, however what remains unclear is how employees in different cultures perceive and subsequently react to HR practices. Robert Probst, Martocchio, Drasgow and Lawler (2000) investigated whether culture moderates the relationship between perceived management practices and individual level outcomes using single firm employee data from the United States, Mexico, Poland and India. Empowerment was negatively associated with satisfaction in India, but positively associated in the other three samples from different countries. Continuous improvement was positively associated in all four samples.

The studies described above are situated at different levels of analysis (country, company, work unit, individual) suggesting that culture influences HR practices and outcomes at different levels of analysis. Therefore in the next section we will explain the impact of culture on HRM by using multilevel theories and research.

Multilevel Theory and Concepts

While multi-level theorizing has existed for decades, over the past 20 years an increased emphasis on multi-level examinations of phenomena has been observed in the organizational literature. We first examine two types of multi-level theories, and then examine some of the accepted concepts for aggregating measures of constructs from one level to represent constructs at another level.

Cross-level vs. Multilevel

First, multilevel theories largely consist of cross-level and multi-level theories. Cross-level theories describe "the relationship between independent and dependent variables at different levels" (Rousseau, 1985: 20). The most common use of cross-level models describes how higher level (e.g. group or organizational) factors impact lower level (individual) factors. Cross-level theories can differ in the nature of the predictions for these higher-to-lower level propositions. First, some cross-level theories propose homogeneity such that both the higher level characteristic and lower level characteristic are homogeneous within groups. Second, some cross-level theories suggest heterogeneity among the lower level phenomena such that there will be variance in reacting to a homogeneous higher level factor (Klein, Dansereau, and Hall, 1994).

Within the context of Hofstede's cultural propositions, while variance across individuals within countries is acknowledged these differences seemed to be ignored. He states "relatively small shifts of group means (i.e. country differences)…nevertheless, may have considerable consequences for group behaviour and institutions." (1980: 72). In a cross-level sense, the proposition seems to be that within a country, the vast majority of people will, based on their cultural values, have similar reactions to particular HR practices.

Second, multi-level models "specify patterns of relationships replicated across levels of analysis" (Rousseau, 1985, 22). In such models the relationships between independent and dependent variables generalizes across organizational entities. Again, in the contexts of International HRM research, such propositions would suggest that at the individual level, people with certain cultural values will react similarly to particular HRM practices, and that at the country level, the effectiveness of those practices will be dependent upon the mean level of cultural values of people within the country.

Models for Aggregation

Next we turn to examine how multilevel researchers have approached the process for making the case both theoretically and empirically for aggregating lower level measures to construct higher level measures of constructs.

Composition Models

Chan (1998) presented a comprehensive overview of the various composition models that can be posited for multilevel phenomena, as well as their implications for measurement. First, an additive model consists of summing and/or averaging lower level scores into a unit level variable, regardless of the within-unit variance. This is predominantly what has been used in the vast majority of cross cultural research as well as research examining differences in HRM practices across countries. With regard to HRM practices, this is not a problem because the focus is simply on examining whether practices are used differentially across countries without necessarily explaining the underlying causes of those differences. However, with regard to studies examining differences in cultural values, an additive model may be less appropriate.

Second, a direct consensus model averages lower level scores, but requires consensus or agreement on the within-unit scores. A consensus model assumes conceptually (and thus, must be demonstrated empirically) not just that there are mean differences across groups, but that there is little within-group variance in the construct. This seems much more applicable to research on country differences in culture, particularly when the goal is to, as Hofstede does, apply the aggregated score to the larger unit, and consequently assume no variance within the unit. We should note that this is not an explicit assumption within Hofstede's work, but rather, is an implicit assumption based on the implications of his work. In fact, some studies that allegedly examine the impact of culture use country as a proxy for culture, attributing the scores found by Hofstede (1980, 1990) on the cultural dimension to the individuals from a given country.

Third, a referent shift model is like a direct consensus model in that (a) it uses an aggregation of the lower level scores, (b) requires consensus or agreement on the within unit

scores, but, instead of individuals responding as to their own psychological state, they are responding as to their perceptions of an unit (e.g. "members of this department focus on customers"). Such a referent shift model has not been applicable to research on HRM practices across countries, but might be applicable to studying cultural differences across countries.

Fourth, a dispersion model focuses on the variance within the unit rather than the consensus within the unit (e.g. diversity). This is implicitly recognized within the cross cultural research stream which often pays lip service to the fact that cultures are not monolithic, yet continues to assume that variance within the culture is unimportant. For instance, Adler (2002: 18-19) states "Diversity exists both within and among cultures; however, within a single culture certain behaviours are favored and others repressed..."

Finally, a process model proposes similar relationships among composition variables at one level that are also present at other levels.

Applying Multilevel Concepts to International HRM

The major problems with such research comparing HR practices across countries can be explained by looking at some of Hofstede's work with regard to country differences in culture. Gerhart and Fang (2005) provided an outstanding critique of Hofstede's (1980, 1990) work on cultural differences across countries, and these issues are directly applicable to studies of HR practices. As noted before, the main issues revolve around mean differences, explained variance, and moderation.

Mean Differences in HRM Practices

Not unlike much of the research comparing the use of HRM practices across countries, Hofstede's (1980, 1990) studies on country differences in culture were based on large samples of individuals reporting their values along the dimensions identified by Hofstede. His analyses consisted primarily of conducting significance tests for mean differences across countries, and then extrapolating from these mean differences to draw conclusions about the importance of culture. His 1980 study reported ANOVA results on 8 items from his national culture scale, all of

which revealed significant F-statistics. He concluded that "we see that the country effect is highly significant (beyond the .001 level) in all eight cases" (1980: 71). From the significant F statistics he justified aggregating responses within countries to form his measure of national culture.

Consistent with an additive model of composition, summing based on mean differences seems reasonably appropriate. If the only purpose in aggregating is to provide a score for each country, then additive models serve that purpose. It allows researchers to determine if, on average, countries differ in their approaches to HRM. For instance, Brewster and Mayhofer (2005) discuss how the mean differences across European countries have converged and diverged over time. This is valuable information for those examining IHRM issues.

However, such a model says nothing about relationships with other variables (a process model) which seem to be the most important implication of Hofstede's work. Again, following on the work of Hofstede, many authors have extrapolated from mean differences in cultures (like Schuler & Rogovsky, 1998; Newman & Nollen, 1996) to conclude that certain HR practices might be more or less effective. However, if much variation in culture exists within a country, then such implications may be entirely unwarranted. As Gerhart and Fang noted (2005), for such an implication to be true, management discretion has to be substantially constrained and organizations must be forced to hire at random from the population (such that the sample hired will exhibit a mean culture score reasonably similar to the country score). If both these assumptions are not met, then a firm could hire individualistic employees within a collectivist culture, and still effectively use HR practices more consistent with individualism.

In addition, extrapolating the mean differences approach to IHRM, even when authors find mean differences in HR practices, this could be due to a number of factors unrelated to country or culture. If different types of organizations are surveyed (e.g. small firms in one country and large firms in another country), or firms from different industries (more capital

intensive firms in one country and less capital intensive firms in another country) the mean differences may be interesting, but due to factors other than country or culture.

Explained Variance

While mean differences in culture or use of HR practices may be interesting, it may be overstated in terms of its importance. This stems from the fact that the F-statistics is highly influenced by sample size, and consequently, small mean differences can be significant with large samples (Gerhart & Fang, 2005). To assess adequately the importance of country as a predictor of culture measures or HR practices, a better measure would be the amount of variance explained by country. So, the important question is how much variance is explained by country? Usually the answer to this question is not reported in much of the culture research, nor in the HR practice research.

Gerhart and Fang (2005) specifically examined the culture research to assess the amount of variance in culture measures that are explained by country. With regard to Hofstede's original (1980) work, they recalculated ICC (1,1) values for country using the ANOVA results reported by Hofstede. ICC (1,1) serves as an index of variance explained and showed that across the 8 items cited by Hofstede, country explained only between 1 and 12 percent of the variance, with a median of 2 percent and a mean of 4 percent.

They then went on to examine similar research results reported by Oyserman, Coon, & Kemmelmeier (2002), England & Harpaz (1990) and Ruiz-Quintanilla & England (1996). From the reported statistics in each of these studies they were able to calculate the amount of variance explained by country and reported that these studies found this across the three studies to be 1.5-4.4%, 2.8%, and 3.8%, respectively.

Such an analysis has not been performed with regard to much of the IHRM literature, but it seems reasonable to assume that even when studies report significant mean differences across countries, that may not translate into considerable amounts of variance explained by countries.

It must be noted that explained variance moves us from an additive model to more of a consensus model. For country to explain significant amounts of variance requires that there is much less variance within country than across countries. Multilevel researchers often use ICC (1,1) as a measure of the consensus (Shrout & Fleiss, 1979) which justifies aggregating lower level scores to a higher level construct. Again, much of the cultural literature seems to implicitly assume reasonably high levels of homogeneity, at least with regard to the implications that these researchers draw. For example, in one of the most influential International HRM books, Dowling, Welch, and Schuler state "It is now generally recognized that culturally insensitive attitudes and behaviors stemming from ignorance of misguided beliefs ("my way is best" or "what works at home will work here") not only are inappropriate but often cause business failure...Activities such as hiring, promoting, rewarding and dismissal will be determined by the practices of the host country and are often based on a value system peculiar to that country's culture." (1999: 14) Gerhart and Fang's (2005) analyses suggest such implications are seriously flawed.

Moderation

Finally, even if country explains large amounts of the variance in HRM practices (or culture), such results may not imply that certain HRM practices are *inappropriate* or *ineffective* across different countries. Returning to the Dowling et al. (1999) quote, note that the implication is that the inappropriate use of practices will result in "business failure," i.e., pointing to an *outcome* of the practices. Previous models of composition have simply examined the differences between countries or variance explained by country, but have not specifically addressed the relationship between either culture or practices on organizational outcomes.

What is implicit in the arguments underlying the mean differences or explained variance approaches is that the differential presence of practices *implies* differential outcomes for any practice use. In essence, this suggests that country (or culture) moderates the relationship between HR practices and outcomes such as turnover or financial performance.

Wright and Nishii (forthcoming) developed a cross level model describing the relationship between HR practices and firm performance. While not all aspects of the model are relevant here, a few aspects can help illustrate the moderating role of culture in the HR practices and performance relationship. In particular, they distinguish between intended HR practices, actual HR practices, perceived HR practices, and employee reactions.

The intended HR practices represent the formal policies of the organization regarding the HR practices that should be implemented for a given job. These are policies often dictated by the HR department, and are assumed to be uniform for all holders of a given post. For instance, a firm may have a policy that among all engineers, the highest performers should receive a 9% merit increase, the average performers a 5% increase, and the low performers a 2% increase. The actual practices represent the true HR practices as they are implemented by the supervisor, manager, or other individual tasked with delivering those practices for that job. Again, for instance, a given manager of a group of engineers may decide to give merit increases of 6%, 5%, and 4% to all the high, average, and low performing engineers in his department. The perceived practices consist of how employees perceive the practices that they and their immediate co-workers have experienced. Workers in the group discussed above may perceive that there is no pay for performance, or that any differences in pay are attributable to something other than performance. Finally, employee reactions to the practices refer to how individual employees respond affectively and behaviorally to the practices with which they perceive they are being managed.

The first linkage between intended practices and actual practices concerns implementation. Cultural orientations might influence the way managers implement new HR practices, since managers base their implementation partly on societal cultural assumptions (see studies by Budhwar & Sparrow, 2002; Aycan et al., 2000). The linkage between the actual and the perceived HR practices represents the communication challenge. Individual employees perceive and interpret the HR and other organizational practices in their organization. Moreover,

people's cultural backgrounds influence the way they collect, process, store, and use information from their environment (Shaw, 1990). Once people have processed the information, they will form some internal strategy for how they will react, and again cultural differences can play a moderating role (see study by Robert et al., 2000). In much of the OB literature these types of cultural interactions are tested by assigning a country-level score to individuals (an additive model) at the individual level of analysis (Tsui, Nifadkar & Ou, 2007), however, to the extent that individuals within a country can differ on cultural orientations, such an attribution may be inappropriate. In addition, according to a dispersion model, particularly this variance in cultural orientations within an organization in a certain country might have consequences as well.

Conclusion

This chapter has argued that existing research and theory in International HRM literature has overstated the role of national culture in the use of HR practices across countries, and the extent to which culture moderates the relationship between HR practices and outcomes. It has suggested a multi-level framework for examining these issues as a means of increasing our understanding of the phenomena we seek to explain. Such an analysis suggests two important future directions for IHRM research.

Firstly, distinguishing among the concepts of mean differences, explained variance, and moderation as well as the implications of each concept will help clarify the implications of any given study. Mean differences tell us whether or not average HRM practices differ across country or organizational contexts, but does not necessarily tell us either the causes or consequences of those differences. Explained variance across countries tells us how much knowing the country can help us predict the HRM system that might be in place, but again, does not tell us the causes or consequences of those differences. However, studies that examine multivariate correlates of those practices (e.g., not just country, but organizational, cultural, industry, institutional, etc.) can help us to understand the causes and consequences as well as

the relative importance of each. Finally, studies on moderation (e.g., Robert, et al., 2000) can better help us unwind the consequences of differences in HRM practices. It is only these latter studies that can truly inform practitioners regarding the potential effectiveness or appropriateness of different practices in different countries or cultures.

Second, there is a need to develop multi-level theories of International HRM. We can integrate Hofstede's ideas of the role of national culture in international management within a cross-level model describing the relationship between HR and performance (as suggested by Wright & Nishii, forthcoming).

Third, there is a need to conduct multi-level research to asses empirically the role of culture at national, organizational and individual level simultaneously. As Gerhart and Fang (2005) noted, organizational differences may explain more variance than country differences in culture. Certainly, individual differences may explain more variance in reactions to HRM practice than organizational or country differences. Multi-level empirical research may help us to understand how firms can select individuals across countries that will be attracted to the firm's global HRM system, rather than simply trying to create customized HRM systems within each country.

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