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# A High Performance Work Practice Scale: Validity And Invariance Across Five Cultures

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A HIGH PERFORMANCE WORK PRACTICE SCALE: VALIDITY AND INVARIANCE  
ACROSS FIVE CULTURES

GABRIELA L. FLORES

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Dean of the Graduate School

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## **Dedication**

To my mother and Joan, my most valuable human resources.

A HIGH PERFORMANCE WORK PRACTICE SCALE: VALIDITY AND INVARIANCE  
ACROSS FIVE CULTURES

by

GABRIELA L. FLORES

DISSERTATION

Presented to the Faculty of the Graduate School of  
The University of Texas at El Paso  
in Partial Fulfillment  
of the Requirements  
for the Degree of

DOCTOR OF PHILOSOPHY

Department of Marketing and Management  
College of Business Administration  
THE UNIVERSITY OF TEXAS AT EL PASO  
May 2016

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Africa); Michael A. Campion from Purdue University (United States); and Lam D. Nguyen  
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## **Abstract**

In this study, a comprehensive high performance work practice (HPWP) model is developed from an existing taxonomy of HPWPs. Using data collected in organizations across seventeen countries, the model is evaluated for equivalence across five cultures and two economic groups. Findings support the generalizability of the seven factor model across these contexts. Finally, the model is evaluated within a larger network of theoretically related antecedents and outcomes. Specifically, the behavioral perspective of HR and the resource based view are used to develop hypotheses relating the use of HPWPs to strategy and organizational resources.

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## **1. Introduction**

The view of employees as a source of competitive advantage has gained support in today's competitive global market (Aryee, Walumbwa, Seidu, & Otaye, 2012; Huselid, 1995; Ichniowski, Shaw & Prennushi, 1997). In this environment, organizational success often depends on employees' abilities to learn, innovate, adapt, and communicate across departments, and often across countries (Wilkinson, Bacon, Redman & Snell, 2010). Human resource management (HRM) - the planning and execution of HR activities in order to get the most out of employees - is seen by many as critical toward these goals.

In the mid-1990s, this growing attention on employees as a possible source of competitive advantage opened the path to a new research stream, known as strategic HRM (SHRM). SHRM examines how, when, and why HR activities impact organizational performance. SHRM researchers do this by investigating the impact of high performance work practices (HPWPs), sometimes called high-involvement or high-commitment work practices (Wood, 1999; Wood & de Menezes, 1998) on organizational outcomes. HPWPs are the HR activities adopted by an organization in order to improve employees' performance for the purpose of meeting organizational goals and achieving a competitive advantage through employees (Snell, Shadur & Wright, 2001; Wright & McMahan, 1992; Colakoglu, Hong & Lepak, 2010). In the SHRM literature, HPWPs are studied both individually and in bundles in which complementary practices are grouped together in a way that reinforces the effectiveness of the other practices in the bundle (Posthuma, Campion, Masimova & Campion, 2013; Dyer & Reeves, 1995; Toh, Morgeson & Campion, 2008). These bundles are known as high performance work systems (HPWSs).

Research on HPWPs and HPWSs is extensive and continues to evolve. However, there are significant problems that stand in the way of theoretical development in this important research area. One concern is the lack of agreement on which HR practices to study and how they should be measured (Toh et al., 2008; Becker & Gerhart, 1996). Such inconsistency impairs growth in any field. Without agreed-upon measures, it becomes difficult to compare and connect prior research, draw conclusions, and build upon those conclusions to develop new knowledge. Evidence from prior research suggests that the benefits of HPWPs are enhanced when they are grouped *appropriately* into HPWSs (Capelli & Singh, 1992; Porter, 1985). But, what are the HPWPs that managers have to choose from? The answer to this question will provide a foundation for future researchers to build new knowledge toward the ultimate goal of SHRM: understanding how HPWPs improve organizational performance. Another shortcoming with existing measures of HR practices is their lack of generalizability. Most existing measures are based on studies conducted in a single industry (Toh, et al., 2008; e.g. Arthur, 1992; MacDuffie, 1995; Batt, 2002; Bartel, 2004) or a single country (Stavrou, Charalambous, & Spiliotis, 2007). This impairs researchers from testing the influence of important contextual factors, like industry and culture, on the effectiveness of HPWPs. Addressing these measurement limitations is important to advancing our understanding in this evolving research stream.

The current research study has two purposes. The first is to address the HPWP measurement limitation in this field. Using Posthuma et al.'s (2013) taxonomy of HPWPs on a sample of U.S. organizations across industries, we aim to verify the appropriateness of this taxonomy as a comprehensive measure of HPWPs. Specifically, we use exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to develop and validate a measure of

HPWPs. The second purpose is to investigate the generalizability of this measure across cultures. Using independent samples from 17 countries, measurement equivalence across cultures is tested and items responsible for non-equivalence are investigated.

The development and validation of a comprehensive measure of HPWPs makes important contributions to researchers and practitioners alike. From a research standpoint, it allows for findings to be compared across studies. Conclusions drawn from these comparisons form the basis for future research. From a practical perspective, introducing cohesion to this research area will improve managers' abilities to adopt HPWPs that lead to performance improvement in their organizations.

The paper is organized in three parts. First, we provide a brief review of the evolution of the field of SHRM, including major perspectives and important findings. Next, using a cross-industry sample of U.S. employees, we turn our attention to developing and validating a HPWP measurement instrument. Using data from seventeen countries, the third major section of the paper seeks to validate the HPWP measure across five cultural clusters.



## **2. Literature Review**

Today, the view of employees and the management of employees as a source of competitive advantage is one of increasing acceptance among researchers and managers alike (Aryee et al., 2012; Huselid, 1995). This has not always been the case. Labor costs are the single largest expense for most organizations. Perhaps because of this, the goal of human resources has historically been one of cost minimization through improved efficiency (Becker & Gerhart, 1996). Often such goals are achieved through strategies of workforce restructuring and/or reduction (Becker & Gerhart, 1996). However, significant changes in the marketplace have caused a gradual shift in this perception.

Globalization, along with ever-increasing technological intensity, have ushered in a marketplace characterized by greater competition, along with rising customer demands for faster and cheaper innovation. In this new environment, traditional forms of competition, such as protected markets, access to capital, and superior technology, are reduced or altogether eliminated (Wilkinson et al., 2010). Further, the move from an industrial society to a knowledge society requires organizations to compete on new ground. When knowledge is critical to success, strategy must be based on internal competencies, human resources, and the ability to manage employees for optimal strategy execution (Prahalad & Hamel, 1994; Snell et al., 2001). In this new environment, organizations must turn to capabilities such as organizational learning, adaptation, and innovation (Wilkinson et al., 2010). Human resources, and the management of human resources, are at the center of these important organizational capabilities. This awareness has led to an interest in human resources beyond that of cost reduction to one of strategic importance for firms (Becker & Gerhart, 1996). It also led to the development of a new research

stream, SHRM, aimed at understanding how, when, and why HPWPs and HPWSs create value for firms and lead to a sustained competitive advantage.

Research investigating the effect of HPWP/Ss on organizational performance has been prevalent since the mid-1990s, when Huselid published his seminal piece showing the impact of HR systems on market value per employee. Since then, research examining this relationship has increased significantly.

## **2.1. Three Perspectives**

Three perspectives dominate SHRM research: universalistic, contingency, and configurational (Delery & Doty, 1996; McMahan, Virick, & Wright, 1999). Studies adopting a universalistic perspective focus on the effect of single HR practices on performance, such as personnel planning (Koch & McGrath, 1996), selection (Terpstra & Rozell, 1993), compensation (Gerhart & Milkovich, 1990), performance-based pay (Dowling & Richardson, 1997; McNabb & Whitfield, 2007), and training and development (Kalleberg & Moody, 1994). Universalistic researchers argue that certain HPWPs can be considered ‘best practice’ and, if adopted, will positively impact organizational performance. The contingency perspective argues that the impact of HPWPs depends on how well the chosen HPWPs fit the organizational context. This type of fit is referred to as external or vertical fit. The most common contingencies examined in the literature include: strategy, industry characteristics, technology, and organizational structure. Finally, the configurational approach can be paired with either of the previous two perspectives and argues that the impact of HPWPs is determined by the alignment *between* practices, also known as internal, or horizontal, fit (Delery, 1998; MacDuffie, 1995; Ichniowski, Kochan, Levine, Olson & Strauss, 1996). The traditional configurational approach is a combination of the universalistic and configurational approaches, in which combinations of HPWPs, or HPWSs,

are determined ‘best practice’ (e.g. Huselid, 1995; Arthur, 1992; Batt, 2002; Guest, Conway & Dewe, 2004). The contingent configurational approach argues that the impact of HPWSs on organizational performance is dependent on context (Lepak, Liao, Chung & Harden, 2006).

## **2.2. Outcomes**

Using these perspectives, SHRM researchers have made significant progress showing the many benefits that HPWPs and HPWSs have on organizations (Jackson, Schuler & Jiang, 2014). Researchers have found links between HPWP/Ss and several external performance factors. The majority of these have been financial outcomes, such as profit growth, revenue, return on assets, return on equity, and Tobin’s Q, as well as improved sales and market value (Jackson et al., 2014; Combs, Liu, Hall & Ketchen, 2006; Huselid, 1995; Delery & Doty, 1996; Guthrie, 2001; Wright, Gardner, Moynihan, & Allen, 2005). However, HPWP/Ss have also been associated to important non-financial benefits, including improved product quality and innovation (Patel, Messersmith, & Lepak, 2013; Wright et al., 2005; MacDuffie, 1995), and greater customer service and satisfaction (Chuang & Liao, 2010; Liao, Toya, Lepak & Hong, 2009).

## **2.3. Mechanisms**

To better understand how HPWP/Ss impact so many important external performance measures, researchers have started to examine the influence of HPWP/Ss within the organization. The majority of mediator studies have been conducted at the individual level of analysis, examining the effect that HPWP/Ss have on employees’ skills, attitudes, and behaviors. The ability, motivation, opportunity (AMO) framework is most often used in such studies, arguing that HPWPs increase employees’ knowledge, skills, and abilities (KSAs), and provide them with the motivation and opportunity to use those KSAs to benefit the organization (Combs, et al.,

2006). Broad and selective recruiting, and overall compensation and benefits attract employees with valuable KSAs to the organization (Combs et al, 2006; Hoque, 1999). Once inside the organization, employees' KSAs are further developed through training and development and job design (Combs et al, 2006; Hoque, 1999; Russell, Terborg & Powers, 1985). Pay incentives, performance appraisals, and internal promotion opportunities align employees' interests with those of the organization, thereby motivating employees to use their KSAs for the good of the organization (Delery & Shaw, 2001; Huselid, 1995). Finally, job design, participative decision-making, and self-managed teams present the opportunities for doing so (Huselid, 1995, Delery & Shaw, 2001). Several important attitude and behavior outcomes have been tied to HPWPs, including reduced turnover (Guthrie, 2001; Batt, 2002; Huang, 1997; Shaw, Delery, Jenkins & Gupta, 1998), increased job satisfaction (Guest, 1999; Hoque, 1999), commitment (Tsui, Pearce, Porter, & Tripoli, 1997), motivation, creativity, discretionary effort, organizational citizenship behavior, and trust in management (Whitener, 2001; for review see Combs et al, 2006; Jiang, Lepak, Hu & Baer, 2012).

Researchers have also started to examine organizational-level mediators that help explain the relationship between HPWPs and organizational performance. These studies typically incorporate the resource-based view (RBV) of the firm. The general argument is that HPWPs convert individual employee KSAs into organizational capabilities (Jackson et al., 2014). The capabilities studied, so far, in the HPWPs literature include organizational flexibility (Schuler, 1986; Beltran-Martin, Roca-Puig, Escrig-Tena & Bou-Llugar, 2008), organizational learning (Snell et al., 1996), and organizational ambidexterity (Patel et al., 2013). Most recently, SHRM research has examined the climate and social structures that HPWPs help create within

organizations, which enable communication and cooperation between employees, and ultimately improve organizational effectiveness (Evans & Davis, 2005; Bowen & Ostroff, 2004).

## **2.4. Measuring HPWPs**

Despite considerable evidence showing that HPWPs are associated with improved performance (Sun, Aryee & Law, 2007; Arthur, 1994; Bae & Lawler, 2000; Bartel, 2004; Batt, 2002; Guthrie, 2001; MacDuffie, 1995; Wright et al., 2005), there are critical limitations in this research, as discussed in recent reviews (Batt, 2002; Combs et al., 2006). The central issue is the lack of a widely accepted measure of HPWPs that is grounded in existing theory and spans industries. Most empirical studies measure different HR practices and measure them in different ways (Boselie, Dietz, & Boon, 2005; Becker & Gerhart, 1996; Guest, 2011). Without agreement on what HR practices to measure and how to measure them, comparing studies and drawing conclusions on which future studies can build, is impossible (Boselie et al.; 2005; Guest, 2011). This difficulty is encountered by Dyer and Reeves (1995). In their review of four studies aimed at developing HR strategy configurations, Dyer and Reeves (1995) find that the number of HR practices measured in each of the studies varies greatly in number as well as content. Though the four studies are similar in purpose, only one HR practice appears in all four studies and of the twenty eight practices that appear in total, twenty two of them appear in only one of the four studies. With such different inputs, it is no surprise that the studies each resulted in different HR strategy configurations. In the first study, Ichniowski (1990) uncovered nine HR strategy configurations. Of the nine configurations, the commitment HR model was associated with greater productivity and higher Tobins q than the other models. A few years later, Ichniowski and colleagues found evidence of three HR configurations (Ichniowski, Shaw, & Prennushi, 1997) in which the innovation system outperformed the mixed model and traditional systems in

both productivity and quality. In 1994, in his study of steel mills, Arthur discovered two HR strategy configurations. The HR configuration he termed the commitment strategy had significantly higher levels of productivity (measured by labor hours per ton of steel produced) and quality (measured using scrap rate) than the control strategy. The commitment strategy was also found to have less than half the turnover of the control strategy. The fourth study reviewed by Dyer and Reeves, MacDuffie (1995), examined the auto industry and found that the HR configuration which he called the flexible or lean HR system resulted in higher levels of productivity and quality, as measured by JD Power scores, than either the transitional or mass production systems found in the study.

Although the number of HR configurations and the HPWPs measured vary greatly across these four studies, what is clear is the consistent superiority of the higher investment configurations across different industries and performance outcomes (Dyer & Reeves, 1995). However, because the HR practices included in each of the studies are so different, the reason for the success of the high investment configurations remains unclear. To truly understand what accounts for the success of high investment HR systems requires HPWPs to be measured the same way across studies. An agreed-upon measure of HPWPs is an important first step toward this aim. The purpose of this study is to address this limitation by developing and validating a measure of HPWPs. In developing a measure of HPWPs, it is important to include a wide range of HR practices examined in the literature (i.e., recruitment and selection, training and development, compensation and benefits, job and work design, and performance management; Toh et al., 2008; Ichniowski et al., 1997; Wright & Boswell, 2002). The HPWP taxonomy put forth by Posthuma and his colleagues (2013) meets this objective, providing a good basis for the measure developed in this study.

## **2.5. Posthuma, Campion, Masimova, and Campion (2013) HPWP Taxonomy.**

With the objective of providing clarity and structure to the “fuzzy” area of HPWPs (Boxall & Macky, 2009), Posthuma et al. developed a taxonomy in 2013 that captures a wide variety of HPWPs. This taxonomy was developed by reviewing and analyzing all HPWPs found in peer-reviewed academic articles published over 20 years (1992 – 2011). This extensive process resulted in 63 individual HR practices. To ensure that the taxonomy was comprehensive, the authors sorted the 63 practices into groups and, in doing so, determined that all categories of HR practices regularly found in the literature were represented. The categories of HPWPs included in the taxonomy are compensation and benefits, job and work design, training and development, recruiting and selection, employee relations, communication, performance management and appraisal, and promotions (e.g., Ichniowski et al., 1997; Wright & Boswell, 2002). Table 2.1 shows all 63 HPWPs grouped into nine categories.

Posthuma et al.’s (2013) taxonomy is well-suited for use in measurement development for several reasons. First, as just discussed, it is comprehensive. Second, because the taxonomy is based on prior research, it is not limited to a single industry, country, or culture, and is therefore generalizable. Third, the taxonomy is appropriate for HPWP measurement because of its focus on the use of practices, rather than on the perceptions or attitudes of employees regarding practices. Along with the primary purpose of developing a comprehensive measure of HPWPs, the secondary goal of this study is the empirical validation of the taxonomy developed by Posthuma et al. (2013)

Table 2-1: Complete list of 63 HPWPs from Posthuma et al. (2013) Taxonomy

**Recruitment and Selection**

Hiring few of those who apply  
Specific and explicit criteria used to hire  
Multiple selection methods to screen applicants  
Employment tests or structured job interviews  
Planning for selection and staffing procedures  
Matching candidates to organizational strategy  
Innovative recruiting practices

**Compensation and Benefits**

Pay for performance  
Formal performance appraisal for pay increases  
Competitive and fair pay compared to other orgs  
Incentive compensation  
Comprehensive fringe benefits  
Profit sharing or gain sharing  
Group-based pay  
Pay for skills or knowledge  
Employee stock ownership  
Bonuses or cash for performance  
Equitable pay processes  
Public recognition or non-financial rewards

**Communication**

Formal information sharing program  
Employees receive info about org's perf and strategy  
Employee input and suggestion processes  
Frequent or regular meetings with employees

**Training and Development**

Extensive training  
Training improve performance  
Training for job or organization-specific skills  
Training for career development  
Evaluation of training  
Cross-functional or multi-skill training  
New employee training and orientation

**Promotions**

Employees are promoted from within the org  
Promotions are objectively based on merit  
Career planning  
Many opportunities to get promoted  
Defined career paths and job ladders  
Succession planning

**Job and Work Design**

Decentralized participative decision making  
Project or other temporary work teams  
Job analysis  
Job rotation or cross functional employee utilization  
Self-managed work teams, quality teams, etc.  
Employee discretion and autonomy  
Job enlargement and enrichment  
Broad task responsibilities  
Flexible work schedules

**Performance Management and Appraisal**

Appraisals based on objective results or behaviors  
Appraisals used for development or potential  
Frequent performance appraisal meetings  
Employees involved in setting appraisal objectives  
Written performance plans with defined objectives  
Multi-source feedback and peer appraisal  
Appraisals based on strategic or team goals

**Employee Relations**

Job security or an emphasis on permanent jobs  
Low status differentials between employees and mgrs.  
Compliant or grievance procedures  
Measures of employee relations outcomes  
Employee opinion and attitude surveys  
Labor union collaboration  
Special and family events and policies  
Diversity and equal employment opportunity

**Turnover and Retention**

Measurement of employee turnover  
Exit interviews  
Employee retention strategies



### **3. Methods**

To develop a measure of HPWPs, we rely on the widely accepted process established by Hinkin (1998): (1) item generation, (2) questionnaire administration, (3) initial item reduction, (4) confirmatory factor analysis, (5) convergent/discriminatory validity, and (6) replication.

#### **3.1. Item Generation and Questionnaire Administration**

A questionnaire containing all 63 HR practices in Posthuma et al.'s taxonomy was administered online to HR managers working in the U.S. For each of the 63 items, participants were asked to rate how many employees in their organization were subject to each HR practice. Ratings ranged from 1 (none or very few) to 5 (all or nearly all). The survey was emailed to 458,513 HR professionals found in LexisNexis. A total of 722 questionnaires were returned for a response rate of .16 percent. Of these surveys, 119 were missing an excessive amount of data, leaving us with 603 usable surveys. Due to the low response rate of the survey, responses between early and late respondents were compared for bias. Lindner, Murphy, and Briers (2001) has shown that late respondents can be used as a proxy for non-respondents. The effect sizes between groups for each variable were measured using Cohen's *d* (Cohen, 1988). All fell below .27, indicating that there is no significant difference between groups (Cohen, 1988).

When reviewing the surveys with the most missing data, it became clear that most of the items missing data appeared later in the survey. This indicated that the length of the survey might be an issue, which can potentially lead to problems with respondent fatigue and bias (Hinkin, 1995). It was determined that shortening the survey for future samples would reduce the likelihood of such problems. Therefore, the 63 items were qualitatively evaluated by management faculty members for redundancy, clarity, and generalizability. Items thought to be

redundant, along with those which were vague or left themselves open to misrepresentation, were eliminated (e.g. frequent or regular meetings with employees, innovative recruiting practices,). Also eliminated were items which were judged to be too specific or which did not translate easily to other countries or cultures (e.g. diversity and equal employment opportunity, labor union collaboration). Items which were not generalizable across different levels of an organization were also eliminated. This included eliminating items which only HR managers could knowingly answer (e.g. measurement of employee turnover, employee retention strategies, equitable pay processes). The resulting list contained 42 items, shown in Table 3.1.

Table 3-1: Reduced list of 42 HPWPs

**Recruitment and Selection**

Hiring few of those who apply  
 Specific and explicit criteria used to hire employees  
 Multiple selection methods to screen job applicants  
 Employment tests or structured job interviews  
 Planning for selection and staffing procedures

**Compensation and Benefits**

Pay for performance  
 Formal performance appraisal for pay increases  
 Competitive and fair pay compared to other orgs  
 Incentive compensation  
 Comprehensive fringe benefits  
 Profit sharing or gain sharing  
 Group-based pay  
 Pay for skills or knowledge  
 Employee stock ownership  
 Public recognition or non-financial rewards

**Communication**

Formal information sharing program  
 Employees receive info about the org's perf and strategy  
 Employee input and suggestion processes  
 Frequent or regular meetings with employees

**Training and Development**

Extensive training  
 Training improve performance  
 Training for job or organization-specific skills  
 Training for career development  
 Cross-functional or multi-skill training  
 New employee training and orientation

**Promotions**

Employees are promoted from within the org  
 Promotions are objectively based on merit  
 Career planning  
 Many opportunities to get promoted  
 Defined career paths and job ladders

**Job and Work Design**

Decentralized participative decision making  
 Project or other temporary work teams  
 Job analysis  
 Job rotation or cross functional employee utilization  
 Self-managed work teams, quality teams, etc.  
 Employee discretion and autonomy  
 Job enlargement and enrichment

**Performance Management and Appraisals**

Appraisals based on objective results or behaviors  
 Appraisals used for development or potential  
 Frequent performance appraisal meetings

**Employee Relations**

Job security or an emphasis on permanent jobs  
 Low status differentials between employees and mgrs.  
 Employee opinion and attitude surveys

### 3.2. Initial Item Reduction

Before conducting factor analysis, the data was split into two subsets. The first, a calibration sample (n=300), is used to develop the measure. The second subset, the validation sample (n=303) will be used to confirm the stability of the measure through replication.

*Exploratory factor analysis.* The first step in exploratory factor analysis is to determine whether the data are suitable for factor analysis. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .92, well exceeding the recommended value of .6 (Kaiser, 1970; Hair, Black, Babin, Anderson, & Tatham, 2006). Providing further support that factor analysis was suitable, Bartlett's test of sphericity was statistically significant (Hair et al., 2006).

Data for the 42 work practices were then subjected to exploratory factor analysis (EFA) to identify the underlying factors reflected by the individual practices (Hair et al., 2006). EFA provides a solid foundation for conducting confirmatory factor analysis since both are based on the common factor model (Harrington, 2009). Using Kaiser's criterion, results revealed the presence of nine factors with eigenvalues exceeding 1, explaining a total of 64.85% of the total variance. No single factor accounted for over 50% of the variance, so it was determined that common method variance was not a concern (Harman, 1967). Varimax rotation was performed in order to identify the factor loadings. Items with low factor loadings  $<.40$  or with problematic cross-loadings onto more than one factor were eliminated (Hair et al., 2006). We also excluded factors with fewer than two items. Remaining variables were subjected to additional rounds of EFA until no further items required trimming. This method resulted in a 28-item, seven-factor solution explaining approximately 70.10% of variance. Table 3.2 shows the 28-item factor structure.

Table 3-2: Exploratory Factor Analysis Results, U.S. Subset 1 (n=300)

Items	Training & Development	Job & Work Design	Recruitment & Selection	Promotion	Perf Mgmt & App.	Comm.	Pay & Benefits
TD2 Training to improve performance	<b>0.875</b>	0.142	0.177	0.188	0.153	0.147	0.086
TD3 Training for job or organization-specific skills	<b>0.795</b>	0.17	0.232	0.164	0.111	0.131	0.077
TD1 Extensive training	<b>0.731</b>	0.092	0.235	0.253	0.157	0.141	0.051
TD4 Training for career development	<b>0.595</b>	0.183	0.215	0.354	0.115	0.132	0.126
TD5 Cross-functional or multi-skill training	<b>0.498</b>	0.3	0.165	0.277	0.063	0.224	0.107
JWD1 Decentralized participative decision making	0.089	<b>0.697</b>	0.069	0.127	0.177	0.085	0.083
JWD7 Job enlargement and enrichment	0.195	<b>0.649</b>	0.094	0.222	0.074	0.157	0.167
JWD5 Self-managed work teams, quality teams, etc.	0.072	<b>0.641</b>	0.058	0.012	-0.073	0.086	-0.003
JWD6 Employee discretion and autonomy	0.089	<b>0.63</b>	0.128	0.063	0.002	0.101	0.143
JWD2 Project or other temporary work teams	0.082	<b>0.617</b>	0.075	0.083	0.141	0.044	0.105
JWD4 Job rotation or cross functional employee utilization	0.114	<b>0.568</b>	0.107	0.243	0.069	0.08	0.061
RS5 Planning for selection and staffing procedures	0.217	0.118	<b>0.746</b>	0.261	0.169	0.138	0.065
RS4 Employment tests or structured job interviews	0.165	0.115	<b>0.69</b>	0.187	0.079	0.079	0.001
RS3 Multiple selection methods to screen job applicants	0.173	0.191	<b>0.688</b>	0.053	0.123	0.213	0.081
RS2 Specific and explicit criteria used to hire new employees	0.24	0.096	<b>0.61</b>	0.088	0.243	0.155	0.104
Promo5 Defined career paths and job ladders	0.245	0.215	0.154	<b>0.693</b>	0.218	0.069	0.141
Promo3 Career planning	0.247	0.143	0.202	<b>0.691</b>	0.182	0.239	0.155
Promo4 Many opportunities to get promoted	0.281	0.228	0.233	<b>0.661</b>	0.162	0.117	0.102
Promo1 Many opportunities to get promoted	0.238	0.163	0.092	<b>0.47</b>	0.114	0.154	0.054
PMA1 Appraisals based on objective results or behaviors	0.154	0.053	0.257	0.206	<b>0.788</b>	0.201	0.152
PMA2 Appraisals used for development or potential	0.21	0.122	0.244	0.244	<b>0.757</b>	0.243	0.162
PMA3 Frequent performance appraisal meetings	0.271	0.222	0.189	0.264	<b>0.48</b>	0.237	0.147
Com3 Employee input and suggestion processes	0.271	0.21	0.22	0.182	0.138	<b>0.695</b>	0.063
Com1 Formal information sharing program	0.198	0.257	0.171	0.209	0.213	<b>0.622</b>	0.123
Com2 Employees receive info about org perf and strategy	0.156	0.147	0.291	0.159	0.253	<b>0.591</b>	0.138
CB1 Pay for performance	0.134	0.115	0.024	0.084	0.155	0.088	<b>0.798</b>
CB4 Incentive compensation	0.058	0.24	0.08	0.121	0.018	0.106	<b>0.65</b>
CB2 Formal performance appraisal for pay increases	0.054	0.082	0.101	0.121	0.418	0.021	<b>0.509</b>

Note: Pattern matrix shown. Principal axis factoring, varimax rotation. KMO measure of sampling adequacy = .92. Variance extracted = 70.10%

### **3.3. Confirmatory Factor Analysis**

Next, confirmatory factor analysis (CFA) was used to improve the properties of the scale developed with EFA. As recommended by Hinkin (1998), we use a separate data set, the U.S. validation sample, for this step.

#### ***3.3.1. Fit indices***

Many indices are used to assess model fit. Several are reported in this study. Three of the indices examined are measures of absolute fit and are used to assess how well the model fits the data (Hu & Bentler, 1995). Chi-square is a well-known measure of absolute fit which actually measures the lack of fit between the model and the sample. A chi-square value of zero indicates a perfect model. While the chi-square statistic is used frequently in the literature, its dependence on sample size weakens its accuracy and causes it to almost always show significance for large samples (Hu & Bentler, 1998; Harrington, 2009). Because of these limitations, other fit indices have been developed. The standardized root mean square residual (SRMR) is also an indicator of absolute fit. SRMR measures the standardized difference between the observed correlations and the correlations predicted by the model. Hu and Bentler (1998) find SRMR to be superior to several other fit indices at differentiating well-fitting models from poor-fitting models. A well-fitting model will generally have an SRMR less than .08 (Hu & Bentler, 1999). However, the authors suggest supplementing SRMR with other fit indices, like the root mean square error of approximation (RMSEA). RMSEA is not sensitive to sample size, but is sensitive to complexity and will assess complicated models as having poorer fit (Harrington, 2009). As with all absolute fit indices, the lower the value, the better the fit. An RMSEA of less than .05 indicates a very good fit to the data, values close to .08 indicate reasonable fit (Harrington, 2009).

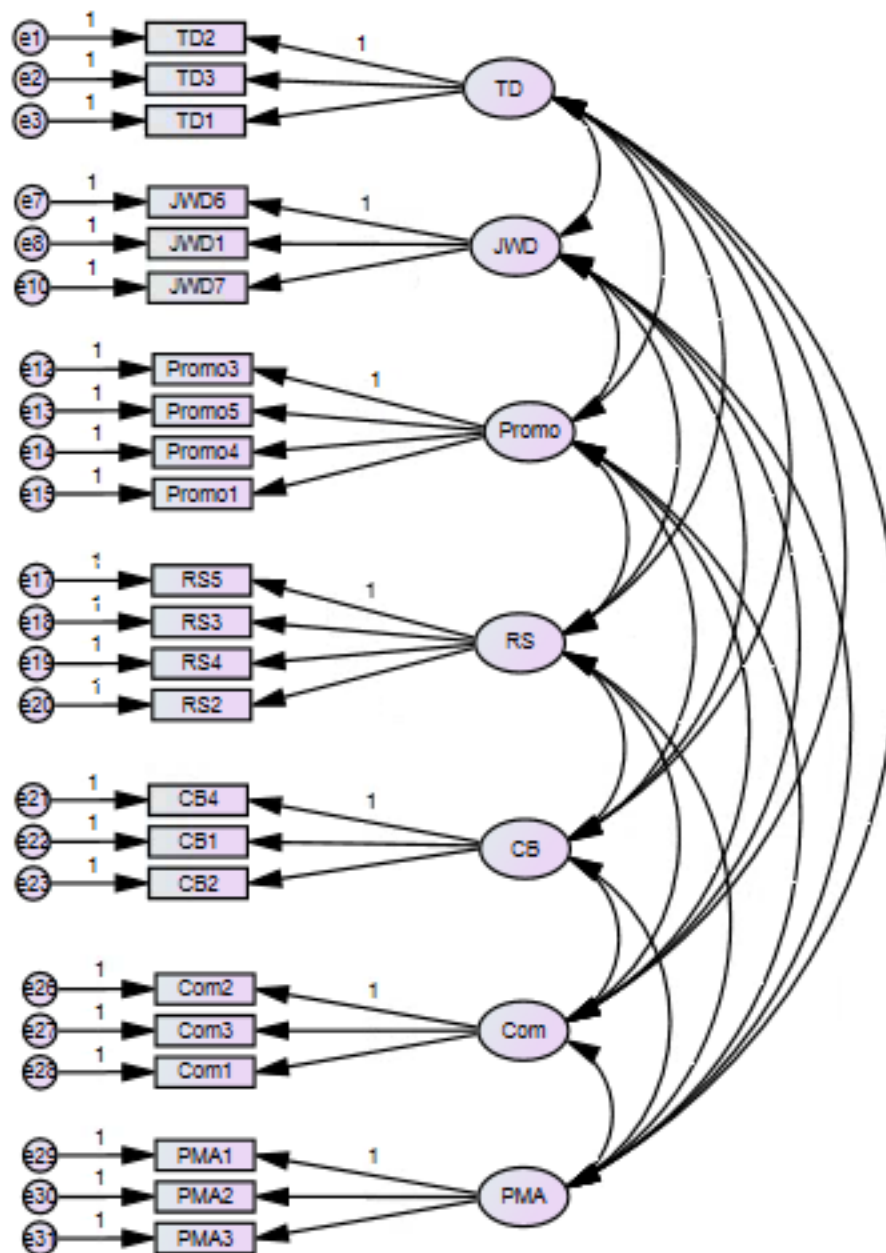
The second type of fit indices examined in this study are referred to as incremental, or comparative, fit indices. These indices measure the improvement in fit between the model being examined and a more restricted baseline model (Hu & Bentler, 1998; Harrington, 2009). The Bentler-Bonett or normed fit index (NFI) was the first fit indicator developed in the literature (Bentler & Bonett, 1980). The NFI has been found to underestimate fit in small samples (Byrne, 2010). To adjust for this limitation, in 1990, Bentler developed the comparative fit index (CFI). For incremental fit indicators, a value equal to or greater than .90 to .95 has been recommended (Byrne, 2010; Hu & Bentler, 1999).

### **3.3.2. *Model fit***

The 28-item, seven-dimension HPWP measurement model developed with EFA was estimated using AMOS 23. Maximum likelihood estimation was used. Inspection of fit indices for the initial model exhibited less than desirable model fit ( $\chi^2_{(329)} = 637.57$ ; NFI = .87; CFI = .93; RMSEA = .056; SRMR = .053). To improve the model, we first examined items that had the lowest factor loadings, along with any items which accounted for multiple high modification indices. Five items were candidates for removal. Before removing any of the items, each was inspected closely to ensure that the content of each item was represented in one of the retained items. For instance the content captured by TD5, “cross-functional or multi-skill training,” is captured by TD1 “extensive training,” and TD3 “training for job or organization-specific skills.” Therefore, removing this item did not take away from the content captured by the measurement tool. Similarly, item JWD5 “self-managed work teams, quality teams, etc.,” overlaps with the retained items JWD2, “project or other temporary work teams,” and item JWD1, “decentralized participative decision making.” The other candidates for removal were inspected with similar results. Thus the five items were removed from the model. Confirmatory factor analysis was

conducted on the remaining 24 items. Model fit was greatly improved ( $\chi^2_{(231)} = 344.72$ ; NFI = .91; CFI = .96; RMSEA = .046; SRMR = .046).

Figure 3-1: 24-Item, Seven-Factor HPWP Model





### 3.3.3. *Reliability assessment*

Before testing the validity of the measure, its reliability must be confirmed, because without reliability, validity is not possible (Kerlinger, 1986; Hinkin, 1998). Reliability is the consistency or agreement of the items that make up the measure (Hinkin, 1995; Singleton & Straits, 2010). Cronbach's coefficient alpha is a widely accepted measure of internal consistency (Hinkin, 1995). Cronbach's alpha was assessed for each of the seven factors in our measure. As shown on the diagonal of the inter-factor correlation table (Table 3.3), all factors exceed the recommended value of .70 (Nunnally, 1978).

The seven factors in the HPWP scale align with the groupings established by Posthuma et al. (2013). The factor *training & development* (TD) has three items ( $\alpha = .88$ ), which ask about the extensiveness of training, the use of training to improve performance, and the use of training to develop job or organization-specific skills. *Job & work design* (JWD) consists of three items ( $\alpha = .75$ ). These items ask about job enlargement practices and the extent to which employees are given discretion and autonomy in their work. *Promotion* (Promo) is also made up of four items ( $\alpha = .86$ ). The items ask about the availability of promotion opportunities in the organization as well as how often promotions are granted to employees within the company. Promo items also ask about the use of career planning and defined career paths available to employees. *Recruitment & selection* (RS) is made up of four items ( $\alpha = .81$ ), which ask about the practices used during hiring as well as the extent to which recruitment and selection procedures are planned. The fifth factor, *compensation & benefits* (CB) is captured by three items ( $\alpha = .74$ ) in which respondents are asked about the extent to which incentive pay and pay for performance programs are used in the organization. *Communication* (Com) also includes three items ( $\alpha = .82$ ). These items ask about the use of formal information sharing programs,

including the degree to which employees' input and suggestions are encouraged and the level of performance and strategy information shared with employees. The final factor in our model, *performance management & appraisal* (PMA) is made up for three items ( $\alpha = .83$ ). Items in the PMA factor seek information from respondents on the extent to which appraisals in their company are based on objective results and behaviors, the extent to which they are used for development purposes, and the frequency of appraisal meetings.

Two of the HPWP categories listed in Posthuma et al.'s (2013) taxonomy were not in our seven factor model. These categories were *turnover* and *employee relations*. To ensure the measurement instrument was generalizable across levels and departments within an organization, we elected not to include the three turnover items in our analysis. These items covered topics that current, non-HR, employees might have difficulty answering: the measurement of turnover, the use of exit interviews, and the use of employee retention strategies. The three items categorized as *employee relations* in the taxonomy were included in our analysis, but did not load significantly onto a factor during exploratory factor analysis and were thus deleted from further analysis. One employee relations item asked about the use of employee opinion and attitude surveys. This item is very similar to one of the communication items regarding employee input. The other two employee relations items asked about job security and low status differentials between employees and managers. Overall, the categories described in Posthuma et al.'s (2013) taxonomy align closely with the seven factors in the HPWP measurement, providing initial empirical validation of the taxonomy.

Table 3-3: CFA Item Loadings and Inter-Factor Correlations for 23-Item Model

Dimension	Factor Loading*
<u>Training &amp; Development (Mean = 9.90, SD = 3.15)</u>	
TD2 Training to improve performance	0.86
TD1 Extensive training	0.82
TD3 Training for job or organization-specific skills	0.84
<u>Job &amp; Work Design (Mean = 11.95, SD = 3.47)</u>	
JWD6 Employee discretion and autonomy	0.82
JWD1 Decentralized participative decision making	0.62
JWD7 Job enlargement and enrichment	0.72
<u>Promotion (Mean = 11.79, SD = 3.50)</u>	
Promo3 Career planning	0.81
Promo5 Defined career paths and job ladders	0.81
Promo4 Many opportunities to get promoted	0.83
Promo1 Employees are promoted from within the organization	0.67
<u>Recruitment &amp; Selection (Mean = 14.12, SD = 4.15)</u>	
RS5 Planning for selection and staffing procedures	0.84
RS3 Multiple selection methods to screen job applicants	0.67
RS4 Employment tests or structured job interviews	0.68
RS2 Specific and explicit criteria used to hire new employees	0.69
<u>Compensation &amp; Benefits (Mean = 9.83, SD = 3.78)</u>	
CB4 Incentive compensation	0.65
CB1 Pay for performance	0.80
CB2 Formal performance appraisal for pay increases	0.65
<u>Communication (Mean = 10.68, SD = 3.34)</u>	
Com2 Employees receive info about org's performance and strategy	0.74
Com3 Employee input and suggestion processes	0.83
Com1 Formal information sharing program	0.75
<u>Performance Management &amp; Appraisal (Mean = 10.13, SD = 3.35)</u>	
PMA1 Appraisals based on objective results or behaviors	0.84
PMA2 Appraisals used for development or potential	0.85
PMA3 Frequent performance appraisal meetings	0.71

\* All factor loadings are significant at the  $p < .001$ .

Inter-Factor Correlations							
	1	2	3	4	5	6	7
(1) Training & Development	0.88						
(2) Job & Work Design	0.58	0.75					
(3) Promotion	0.61	0.61	0.86				
(4) Recruitment & Selection	0.53	0.45	0.54	0.81			
(5) Compensation & Benefits	0.31	0.48	0.45	0.20	0.74		
(6) Communication	0.61	0.64	0.72	0.63	0.45	0.82	
(7) Performance Management & Appraisal	0.64	0.55	0.72	0.62	0.42	0.78	0.83

Alpha coefficients are on the diagonal.

### **3.4. Convergent and Discriminant Validity**

Convergent and discriminant validity are two types of construct validity that assess whether the measurement instrument being developed measures what it is intended to measure (Singleton & Straits, 2010).

#### ***3.4.1. Convergent validity***

Convergent validity is the degree to which the items being measured are related to other items that they should be related to (Singleton & Straits, 2010). Convergent validity is determined by examining the individual items in the measure to ensure they load significantly onto their respective factors (Anderson & Gerbing, 1988; Arnold & Reynolds, 2003). Table 3.3 shows path loadings all exceed .62 and are significant at the  $p < .001$  level. Thus, the convergent validity of the model is supported. Table 3.3 also shows correlations among the seven factors. All correlations are positive, revealing that organizations either implement or avoid using various types of HPWPs. Inter-factor correlations between the seven HPWP factors range from .20 to .78. The strongest correlation exists between performance management and appraisal (PMA) and communication (Com). Performance appraisals are a method of communicating with employees. Therefore, it makes sense that organizations that use appraisals to manage and develop employees also see the value in sharing organizational information with employees and in facilitating the sharing of information among workers.

#### ***3.4.2. Discriminant validity***

Although the seven HPWP factors are related, they must also exhibit discrimination (Westbrook & Black, 1985). Discriminant validity between the constructs is supported when AVE estimates exceed all squared inter-factor ( $\phi$ ) correlations (Fornell & Larcker, 1981;

Arnold & Reynolds, 2003). In our sample, all but one AVE meet this requirement. The AVE for Com (.60) is slightly lower than the PMA/Com phi correlation (.61). Therefore additional discriminant validity testing is undertaken.

The current study proposes that the seven-factor model is the best way to understand the dimensionality of HPWPs. However, a number of different dimensional configurations have been used in the literature to examine HPWPs. In order to further confirm the discriminant validity of our model, we follow a procedure used by previous researchers in which plausible alternative models are developed and compared with the proposed seven-factor model to determine which factor structure provides the best fit for the data (e.g., Garcia, Posthuma, Mumford, & Quinones, 2009). Specifically, we compared the seven factor model to seven other plausible groupings of HPWPs.

First, an alternative single-factor model was developed in which all HPWPs load onto a single factor. Rather than using subcategories of practices, this model suggests a simplistic view of HPWPs as unidimensional. Most SHRM researchers adopt this view of using one overall measure of HPWPs. These researchers typically argue that large investments in HPWPs result in improved organizational performance (Bae & Lawler, 2000; Batt, 2002; Guthrie, 2001; Huselid, 1995; Sun et al., 2007; Patel et al., 2013; Aryee et al., 2012). For instance, Patel, et al. (2013) use an additive index of HPWPs and find that greater investment in HPWPs leads to organizational ambidexterity and ultimately firm growth.

Next, a two-factor model based on a make vs. buy perspective was reviewed. In the “make” factor, we included items which help develop the skills and capabilities of current employees. This factor includes items having to do with training and development, performance management and appraisal, communication, job and work design, and promotion. The “buy”

factor includes practices that focus on helping employers attract and hire talent into the organization who possess the desired skills and capabilities desired. Recruitment and selection practices as well as those having to do with compensation and benefits are included in this factor.

A second two-factor model is investigated which incorporating the resource-based view (RBV) of the firm. RBV argues that a firm's investment in HPWPs can lead to a sustained competitive advantage by developing resources that are difficult for competitors to imitate (Barney, 1991; Wright, Dunford, & Snell, 2001; Donate, Peña, & Sánchez, 2016). Two organizational resources impacted by HPWPs and discussed in the SHRM literature are human capital and social capital (Donate et al., 2016). In this model, we separate HPWPs into two dimensions, based on the organizational-level resource to which they most contribute. In the first factor we include practices which aim at increasing human capital. These are recruitment and selection, training and development, promotion, and compensation and benefits. Practices which increase social capital in an organization are combined in the second factor. Namely, job and work design and communication.

Next, we developed a three-factor model structured after the perspective that HPWPs are designed and implemented to improve organizational performance by increasing the ability, motivation, and opportunity (AMO) of employees to contribute to organizational goals (Rabl, Gerhart, Jayasinghe, & Kuhlmann, 2014). In this model, the first factor includes the HPWPs that increase the ability of an organization's employees. This includes recruiting and selection practices as well as training and development. The second factor includes items that motivate employees to work toward organizational goals. Promotion practices, performance management and appraisals, and compensation and benefits practices can all be used as sources of motivation

for employees. The last factor in this model includes job and work design practices, which provide employees with opportunities to contribute to organizational success.

Finally, three six-factor models were assessed based on highly correlated factors in our seven-factor model. The first of these models combined Com with Promo into a single factor. In the seven factor model, these two factors have an inter-factor correlation of .72. The second six-factor model examined combined the factors PMA and Promo, which have a correlation of .72 in the proposed model. The third and final six-factor model developed for comparison combined PMA and Com. Of the seven factors in our proposed model, PMA and Com had the highest inter-factor correlation at .78.

Table 3.4 compares the fit indices for each of the alternative models. Results show that the proposed seven-factor solution provides the best fit of the data. The next best fit was exhibited by the 6 factor model which combines PMA and Com into a single factor. However, the chi-square difference test showed that the improvement in fit provided by the seven-factor solution is statistically significant ( $\Delta\chi^2_{(6)} = 75.05, p < .001$ ).

Table 3-4: Fit Statistics for Proposed and Alternative Models

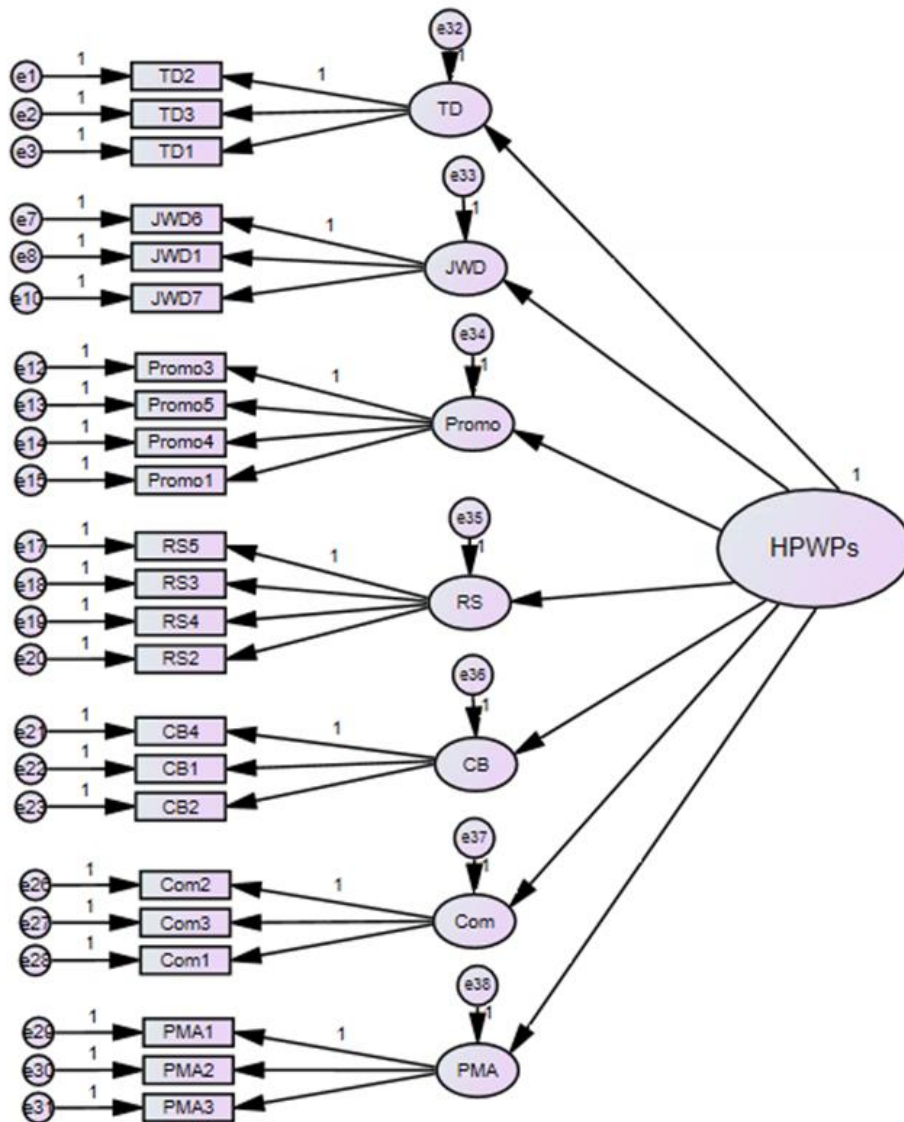
Model	$\chi^2$	df	NFI	CFI	RMSEA	SRMR
Null model	3720.58	253				
Single factor	1362.37	252	0.66	0.70	0.12	0.09
Two-factor						
RBV (Combined: RS+TD+PMA+Promo+CB; JWD+Com)	1250.24	251	0.68	0.72	0.12	0.08
Make v. buy (Combined: TD+PMA+Com+JWD+Promo; RS+CB)	1208.84	251	0.69	0.73	0.11	0.10
Three-factor						
AMO (Combined: TD+RS; Promo+PMA+CB; JWD+Com)	1070.72	249	0.72	0.77	0.11	0.08
Six-factor						
Combined: Com+Promo	482.64	215	0.87	0.92	0.06	0.05
Combined: PMA+Promo	491.24	215	0.87	0.92	0.07	0.05
Combined: PMA+Com	419.77	215	0.89	0.94	0.06	0.05
Seven-factor						
Distinct: TD, JWD, Promo, RS, CB, Com, PMA	344.72	209	0.91	0.96	0.05	0.05

Note: NFI = normal fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual



Our final test of validity included conducting a second-order CFA. In this model, each of the seven factors were indicators of a higher-order HPWP variable (see Figure 2). The fit indices for this model showed good fit with the data ( $\chi^2_{(223)} = 372.82$ ; NFI = .90; CFI = .96; RMSEA = .047; SRMR = .052). Also each of the loadings from the first-order factors to the second-order global HPWP factor were significant at  $p < .001$ . The paths for TD, JWD, Promo, RS, CB, Com, and PMA were .73, .71, .83, .68, .50, .88, .87, respectively. This second-order analysis validates that the seven factors capture a global HPWP factor.

Figure 3-2: Second-Order CFA Model



### **3.5. Replication with Cross-Country Sample**

Replication is a critical part of validating any new measurement instrument. This step assesses the generalizability of the measure, removing any influence caused by a specific sample of cases (Hinkin, 1998). As organizations continue to expand operations globally, the need for cross-cultural research in HPWPs continues to grow. Questions about the impact of HPWPs in different cultures are becoming increasingly important for multinational organizations. For this reason, it is important that a measurement of HPWPs is validated across cultures.

When examining culture, researchers typically adopt one of two perspectives: the emic approach or the etic approach (Pike, 1954). These approaches differ in terms of their assumptions, goals, and methods. The emic approach views culture as a system (Morris, Leung, Ames, & Lickel, 1999). Studies adopting this perspective seek to understand a single culture from an insider's perspective. Emic researchers use a culture's own language and understanding to describe behaviors and thoughts in that culture, and to develop constructs (Morris, Leung, Ames, & Lickel, 1999). Emic studies rely on ethnographic methods in which researchers immerse themselves in a single culture (Morris et al., 1999). On the other hand, researchers adopting an etic perspective view culture as consisting of different components which can be studied separately. Etic studies are comparative in nature. The aim of etic studies is to understand differences between cultures by using constructs that apply across cultures (Pike, 1954; Morris et al., 1999). Using institutional theory, the current study supports an etic perspective by proposing the existence of a comprehensive measure of HPWPs that is generalizable across cultures.

### ***3.5.1 Institutional theory***

In an economy marked by continued globalization and ever-increasing competition, the management of employees across cultures is increasingly important to firm success. Institutional theory states that organizations seek legitimacy by adopting practices that are consistent with their environment (DiMaggio & Powell, 1983). Three types of institutional processes are discussed in the literature: coercive isomorphism, mimetic isomorphism, and normative isomorphism (DiMaggio & Powell, 1983; Björkman, Fey, & Park, 2007). Coercive isomorphism refers to a situation in which a powerful entity, like the government, requires the organization to adopt certain practices. Mimetic isomorphism is the process of adopting practices based on the practices of other successful organizations. Finally, normative isomorphism is the process by which organizations adopt practices based on the social norms of professional organizations (Björkman et al., 2007). These three institutional processes occur in response to different social pressures in a given environment, however their end result is the same: increasingly homogeneous organizations (Heugens & Lander, 2009).

Although the specific HPWPs that are considered appropriate in a particular environment will vary based on coercive, mimetic, and normative forces present in that environment, globalization can cause organizations to experience contradictory forces as they are subjected to both local and international pressures (Björkman et al., 2007). Local laws, values, and norms will have a strong influence on the HPWPs viewed as appropriate in a particular environment. However, due to increased globalization, organizations are also influenced by practices implemented by international competitors. Further, as research continues to find that increased investment in HPWPs is positively related to performance, organizations will feel even more

pressure to adopt standard HPWPs. Therefore, we expect the seven factor, 23-item measure of HPWPs will be generalizable across cultures.

*Hypothesis 1: The seven factor, 23 item HPWPs measure will be generalizable across cultures*

**Cross-country sample.** To test the stability of the model across cultures, the seven factor, 23-item model was estimated in AMOS 23 using an independent sample. A 42-item HPWP questionnaire was administered to employees and managers working in sixteen countries (Argentina, Belgium, Brazil, Chile, China, Colombia, Germany, India, Italy, Mexico, Peru, Poland, Russia, South Africa, Spain, and Vietnam). Questionnaires were translated and administered by research partners located in each country. Double translation was used in which the original questionnaire was translated from English to the local language by a bilingual speaker. A separate bilingual speaker then translated the questionnaire from the local language back to English. Any discrepancies between the two English versions of the questionnaire were discussed and resolved (Brislin, 1980). Data was gathered using questionnaires administered via mail, computer aided telephone interviews (CATI), or online. In some countries, more than one method was implemented. For each of the organizations in the non-U.S. sample, multiple informants were surveyed regarding the presence of HR practices. This method is recommended to avoid the bias of relying solely on HR managers by also seeking responses from workers who directly experience and are impacted by the HR practices (Gerhart, Wright, Mahan, & Snell, 2000; Liao et al., 2009). A total of 2,492 usable surveys were returned. The U.S. calibration sample was combined with the non-U.S. sample increasing the cross-country sample to 2,795. Table 3.5 shows the cross-country sample broken down country.

Table 3-5: Countries and Sample Sizes

Country	n
Argentina	110
Belgium	310
Brazil	53
Chile	73
China	120
Colombia	153
Germany	110
India	204
Italy	190
Mexico	176
Peru	92
Poland	216
Russia	259
South Africa	140
Spain	262
US	303
Vietnam	24

Using CFA, the seven factor HPWP model, developed with U.S. data, was evaluated using the entire cross-country data. Results suggest good model fit ( $\chi^2_{(209)} = 1615.33$ ; NFI = .96; CFI = .96; RMSEA = .049; SRMR = .034). Significant modification indices were found, however the model fit the data well so no additional adjustments were made.

The fact that the seven-factor HPWP instrument represents the data well for both the U.S. and cross-country samples is encouraging. However, evaluating the cross-country group as a homogeneous sample and finding adequate fit does not guarantee that the HPWP instrument is measuring the same items across countries. Only by confirming that the instrument acts equivalently across groups will we be able to trust that observed differences in the data are due to

actual differences in HPWPs and not merely perceptual differences in how individuals from different groups respond to the measurement items or scales (Steenkamp & Baumgartner, 1998; Byrne, 1993; Jimenez, Hadjimarcou, Barua, & Michie, 2013). In order to truly examine whether the HPWP instrument developed with the U.S. sample operates similarly in other countries, measurement invariance must be assessed. Measurement invariance is assessed by applying increasingly strict invariance tests to a multi-group CFA model. The first, and least stringent of these examines whether configural invariance is present, meaning that the number of factors is similar across groups. Configural invariance is assessed by allowing all parameters in the multi-group CFA model to vary freely across groups. If the multi-group model fit is acceptable, configural invariance is supported. Metric invariance examines whether factor loadings are equal and manifest in the same way across groups (Steinmetz, Schmidt, Tina-Booh, Wieczorek, & Schwartz, 2009). If found, metric invariance provide support that the factors have the same meaning and can thus be compared across groups (Steinmetz et al., 2009). To test metric invariance, a multi-group CFA is conducted in which factor loadings are constrained equal across the groups. The fit of the constrained model is compared with results of the configural, or baseline, model. If the change in model fit is not significant, metric invariance is supported. Finally, scalar invariance constrains both factor loadings and intercepts equal across groups. Scalar invariance tests that the scales (zero points and intervals) of each item are equivalent across groups (Cheung & Rensvold, 2002). When scalar invariance is found, it indicates that any systematic bias in the response to a measured item is the same across groups (Steinmetz et al., 2009). Scalar invariance is supported when the model fit between the scalar invariant and baseline models does not change significantly.

Configural invariance is a pre-requisite to metric invariance. Finding metric invariance thus allows us to infer that the latent factors are made up of the same number of indicators and that those indicators have the same meaning across groups (Steinmetz et al., 2009). In order for meaningful comparisons to be made between countries and their use of HPWPs, partial metric invariance, at a minimum, must be met (Steenkamp & Baumgartner, 1998).

Two criteria for determining invariance appear in the literature. The first and best known criteria is the  $\chi^2$  difference test. In this test, the difference in  $\chi^2$  between the constrained model and the baseline, or configural, model is distributed over the difference in degrees of freedom between the two models. An insignificant  $\Delta\chi^2$  indicates that the two models being compared are invariant (Byrne, 2010). Recently, researchers have argued that the  $\Delta\chi^2$  test is too stringent for applied research purposes (MacCallum, Roznowski, & Necowitz, 1992; Cheung & Rensvold, 2002; Byrne, 2010). Seeking to address this concern, Cheung and Rensvold (2002) undertook an in-depth study examining several goodness-of-fit indices. What resulted was an alternative invariance decision criteria based on the change in CFI between the constrained model under review and the baseline model. Specifically, the authors propose that invariance is likely when  $\Delta\text{CFI} < .01$  (Cheung & Rensvold, 2002). This criteria is seen by many applied researchers as a practical alternative to the  $\Delta\chi^2$  test and is increasingly being used in the literature (e.g., Gagne et al., 2015). Both criteria are reported in the current study.

Before assessing measurement invariance across cultures and economic groups, we examine the model across small and large organizations. The full sample was divided into three approximately equal subsets based on the size of the organization (i.e. small, medium, and large). To increase the robustness of the assessment, the middle sample was not used in the comparison. CFA results showed the model fit the data well for both small ( $\chi^2_{(209)} = 629.43$ ; NFI = .95; CFI



= .96; RMSEA = .051; SRMR = .036) and large ( $\chi^2_{(209)} = 832.86$ ; NFI = .92; CFI = .94; RMSEA = .06; SRMR = .045) companies. In order to determine if the HPWP measure was invariant across the two groups, multi-group analysis in AMOS 23 was used. The fit of the baseline model, in which all parameters were allowed to vary, was good ( $\chi^2_{(418)} = 1472.285$ ; NFI = .93; CFI = .95; RMSEA = .039; SRMR = .036), supporting configural invariance. Next, we assessed metric invariance by constraining factor loadings to be equal across both groups. Comparing the constrained model to the baseline model resulted in only a slight change in fit when using the CFI criteria developed by Cheung and Rensvold (2002), as well as the more stringent  $\chi^2$  difference test ( $\Delta\text{CFI} = .001$ ;  $\Delta\chi^2_{(16)} = 38.89, p = .001$ ). The third invariance test maintained the equality of factor loadings from the previous test and added intercept equality constraints. The CFI difference test found support for scalar invariance, however, the  $\chi^2$  difference test did not ( $\Delta\text{CFI} = .01$ ;  $\Delta\chi^2_{(32)} = 225.09, p < .001$ ). Together, these three invariance tests provide evidence that the seven-factor HPWP measure is invariant across the small and large organizations with respect to the number of factors and their loadings. However, results regarding the equivalence of item intercepts across the two groups is dependent on which criteria is used.

### ***3.5.2. Culture clusters***

Before beginning the equivalence assessment, we combine the seventeen countries in our dataset into clusters. Clusters allow us to increase the sample sizes of our groups and make the evaluation more manageable. More importantly, grouping nations into meaningful clusters allows a balanced and realistic study of HPWPs that exists between the extremes of local and global perspectives (Ronen & Shenkar, 2013; Asmussen, 2009). There is not one single widely

accepted clustering of countries in the literature. This is understandable since researchers cluster countries for various reasons (Gupta, Hanges, & Dorfman, 2002). In the current study, we seek clusters that will help us answer whether the seven-factor HPWP factor structure found in the previous study is equivalent across the countries in our sample. Further, if the factor structure is not equivalent, we want country clusters that provide meaningful reasons for the variance. In this study, we examine clusters based on culture and then on economic factors.

The country clusters used to assess the impact of culture on the HPWP factor structure are based on the widely accepted review by Ronen and Shenkar (2013), and on research by Gupta et al. (2002). The seventeen countries in our data combine to form seven clusters. However, due to small sample sizes from China and Vietnam, these countries are combined with India to form a single cluster. Cattell (1950) clustered India with China in his study which looked at psychological, sociological, demographic, and economic measures of countries, so this grouping is justified. Germany, which is the only country in our sample from the Germanic Europe cluster also had a small sample size. To address this issue, Germany was including in the Eastern Europe cluster with Poland and Russia.

A CFA was conducted on each of the five groups independently. Results show the seven factor structure fits the data well in the Anglo, Latin American, and Latin European clusters. The fit is slightly reduced in the Eastern European and Asian clusters, but acceptable (see Table 3.6). Results for the Asian cluster show that correlating error terms for items RS2 and RS3 significantly improves model fit ( $\Delta\chi_{(1)}^2 = 55.61$ ). Overall, HPWPs are well represented by the seven factors in our measure for each of the five culture clusters in our sample.

Table 3-6: Confirmatory Factor Analysis Fit Indices for Five Individual Country Clusters

Cluster	$\chi^2$	df	NFI	CFI	RMSEA	SRMR
(1) Anglo (U.S. and S. Africa)	487.44	209	0.91	0.95	0.06	0.04
(2) Latin American (Argentina, Brazil, Chile, Colombia, Mexico, Peru)	694.43	209	0.92	0.94	0.06	0.04
(3) Latin European (Belgium, Italy, Spain)	675.25	209	0.92	0.95	0.05	0.04
(4) Eastern European (Poland, Russia, Germany)	1039.59	209	0.90	0.92	0.08	0.06
(5) Asian (China, Vietnam, India)	519.56	209	0.86	0.91	0.07	0.05

**Measurement invariance across clusters.** Measurement invariance was tested across the five cultural clusters using a method employed by previous researchers in testing multiple groups (e.g. Gagne et al., 2015). We began by testing configural invariance between the Anglo cluster and each of the four remaining clusters, one a time. Baseline configural models for each of the four combinations (the Anglo cluster plus one other) showed good fit, indicating the HPWP model is configurally invariant across all four pairings (see Table 3.7).

Table 3-7: Fit Statistics for Four Culture Pairings Separately

Cluster Pairing	$\chi^2$	df	GFI	NFI	CFI	RMSEA	SRMR
Anglo and Latin American	1181.87	418	0.91	0.92	0.95	0.04	0.04
Anglo to Latin European	1162.755	418	0.92	0.92	0.95	0.04	0.04
Anglo to Eastern European	1526.943	418	0.88	0.91	0.93	0.05	0.04
Anglo to Asian	1007.049	418	0.90	0.89	0.93	0.04	0.04

Next, metric invariance was assessed by constraining factor loadings to be equal between culture pairings. Finally, scalar invariance was tested by constraining both factor loadings and intercepts equal across pairings. As previously mentioned, there are two well-known invariance decision criteria in the literature. Table 3.8 shows fit statistics for the  $\chi^2$  difference test. To reiterate, invariance is found when  $\Delta\chi^2$  between the constrained model under review and the

baseline/configural is not significant. The results show that the measurement models for the Latin American and Eastern European cultures have the greatest variance when compared to the Anglo cluster ( $\Delta\chi^2_{(16)} = 60.83, p < .001$ ;  $\Delta\chi^2_{(16)} = 51.98, p < .001$ , respectively). The Latin European cluster is also non-invariant ( $\Delta\chi^2_{(16)} = 34.84, p = .004$ ) but less so. Finally, the Asian cluster does not show a significant reduction in fit relative to the baseline model ( $\Delta\chi^2_{(16)} = 25.034, p = .07$ ), suggesting that the HPWP model is metrically invariant across the Anglo and Asian groups. Examining  $\Delta\chi^2$  between the scalar invariant and baseline models shows that none of the four culture clusters pairings were found to have scalar invariance. Table 3.9 examines the same four cluster pairings using the CFI difference criteria, developed by Cheung and Rensvold (2002). Using this alternative criteria, all four cluster pairings are found to be metrically invariant and scalar invariance is supported for the Anglo/Latin European cluster (with rounding).

Table 3-8: Fit Statistics for Invariance Tests Using Chi-Square Difference Criteria

Cluster Pairing	Baseline Model		Metric Invariance Model			Scalar Invariance Model		
	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$	$p$	$\Delta\chi^2$	$\Delta df$	$p$
Anglo and Latin American	1181.87	418	60.83	16	0.000	329.97	32	0.000
Anglo to Latin European	1162.755	418	34.839	16	0.004	224.09	32	0.000
Anglo to Eastern European	1526.943	418	51.987	16	0.000	447.89	32	0.000
Anglo to Asian	1007.049	418	25.034	16	0.070	207.48	32	0.000

Values for  $\Delta\chi^2$  and  $\Delta df$  represent comparisons with baseline model. Invariance supported when  $\Delta\chi^2$  is not significant.

Table 3-9: Fit Statistics for Invariance Tests Using CFI Difference Criteria

	Baseline Model	Metric Invariance Model		Scalar Invariance Model	
Cluster Pairing	CFI	CFI	$\Delta$ CFI	CFI	$\Delta$ CFI
Anglo and Latin American	0.95	0.94	0.00	0.92	0.02
Anglo to Latin European	0.95	0.95	0.00	0.93	0.01
Anglo to Eastern European	0.93	0.93	0.00	0.90	0.03
Anglo to Asian	0.93	0.93	0.00	0.91	0.02

Invariance supported when  $\Delta$ CFI does not exceed .01 when compared to baseline/configural model (Chuang & Rensold, 2002)

Considering the results of the more widely accepted and stringent  $\chi^2$  difference test, it is clear that although the seven-factor HPWP model has acceptable fit in each culture cluster individually and is invariant in each of the four culture pairings regarding the number of factors (configural invariance), it does not guarantee that the item measurements are equivalent across groups. Our goal for this study is to develop a HPWP measurement instrument that can be used in a meaningful way across cultures. In order to achieve this goal, partial metric invariance, at a minimum, must be established (Steenkamp & Baumgartner, 1998; Jimenez et al., 2013). Metric invariance implies that items have the same meaning across groups and thus allows for the comparison of factors across groups (Begun et al., 2003). Scalar invariance concerns the systematic bias in responses across groups. As long as the model exhibits partial measurement invariance, meaningful comparisons can be made between groups (Steenkamp & Baumgartner, 1998; Jimenez et al., 2013). Therefore, the remainder of this study focuses on remedying the metric non-equivalence found in our model.

To determine the source of the non-equivalence, it is necessary to systematically test the invariance of all items in each factor separately for each pairing. This testing is shown in Table 3.10. Each cluster pairing has been labeled separately (a through d) to facilitate discussion. Further, each model that is tested is also numbered separately. Under each country pairing,

Model 1 represents the unconstrained baseline/configural model and Model 2 is the full measurement invariance model in which all factor loadings are constrained. Partial invariance tests begin on Model 3 for each pairing. Beginning with the Anglo/Latin American pairing, reported in Table 3.10(a), three factors were found to be invariant: JWD, RS, and Com. However, when all TD items were tested together,  $\chi^2$  changed significantly ( $\Delta\chi^2_{(2)} = 17.99, p = .000$ ). The same was true for Promo ( $\Delta\chi^2_{(3)} = 8.93, p = .030$ ), CB ( $\Delta\chi^2_{(2)} = 17.11, p = .000$ ) and PMA ( $\Delta\chi^2_{(2)} = 10.63, p = .005$ ). Once it was determined that items in factors TD, Promo, CB, and PMA were contributing to the non-equality, each item in these factors was tested one at a time. Testing revealed that one item in each of the problematic factors was non-equivalent across the Anglo and Latin American groups. These items were TD1 (extensive training), Promo1 (employees are promoted from within the organization), CB2 (formal performance appraisal for pay increases), and PMA3 (frequent performance appraisal meetings) (Table 3.10(a), models 11, 14, 16, and 18, respectively).

Table 3-10: Tests for Metric Invariance for Four Cluster Pairings

Model tested	$\chi^2$	df	Model comparison	$\Delta\chi^2$	$\Delta df$
<i>(a) Anglo/Latin American</i>					
1 Unconstrained (baseline/configural)	1181.87	418			
2 All factor loadings constrained (metric)	1242.70	434	2 vs. 1	60.83**	16
3 ALL TD items constrained	1199.86	420	3 vs. 1	17.99**	2
4 All JWD items constrained	1182.42	420	4 vs. 1	0.55	2
5 Model 4 and all Promo items constrained	1191.35	423	5 vs. 4	8.93*	3
6 Model 4 and all RS items constrained	1186.39	423	6 vs. 4	3.97	3
7 Model 6 and all CB items constrained	1203.50	425	7 vs. 6	17.11**	2
8 Model 6 and all Com items constrained	1187.78	425	8 vs. 6	1.39	2
9 Model 8 and all PMA items constrained	1198.41	427	9 vs. 8	10.63**	2
10 Model 8 plus TD3 constrained	1188.24	426	10 vs. 8	0.46	1
11 Model 10 plus TD1 constrained	1205.75	427	11 vs. 10	17.51**	1
12 Model 10 plus Promo5 constrained	1188.84	427	12 vs. 10	0.60	1
13 Model 12 plus Promo4 constrained	1189.32	428	13 vs. 12	0.48	1
14 Model 13 plus Promo1 constrained	1197.17	429	14 vs. 13	7.85**	1
15 Model 13 plus CB1 constrained	1191.53	429	15 vs. 13	2.21	1
16 Model 15 plus CB2 constrained	1206.43	430	16 vs. 15	14.90**	1
17 Model 15 plus PMA2 constrained	1192.26	430	17 vs. 15	0.73	1
18 Model 17 plus PMA3 constrained	1202.18	431	18 vs. 17	9.92**	1
<i>(b) Anglo/Latin European</i>					
1 Unconstrained (baseline/configural)	1162.76	418			
2 All factor loadings constrained (metric)	1197.59	434	2 vs. 1	34.84*	16
3 All TD items constrained	1165.19	420	3 vs. 1	2.43	2
4 Model 3 and all JWD items constrained	1165.93	422	4 vs. 3	0.74	2
5 Model 4 and all Promo items constrained	1178.18	425	5 vs. 4	12.25**	3
6 Model 4 and all RS items constrained	1170.11	425	6 vs. 4	4.18	3
7 Model 6 and all CB items constrained	1174.67	427	7 vs. 6	4.56	2
8 Model 7 and all Com items constrained	1181.15	429	8 vs. 7	6.48*	2
9 Model 7 and all PMA items constrained	1178.81	429	9 vs. 7	4.14	2
10 Model 9 plus Promo5 constrained	1181.71	430	10 vs. 9	2.90	1
11 Model 10 plus Promo 4 constrained	1182.47	431	11 vs. 10	0.76	1
12 Model 11 and Promo1 constrained	1191.09	432	12 vs. 11	8.62**	1
13 Model 11 plus Com3 constrained	1187.22	432	13 vs. 11	4.75*	1
14 Model 11 plus Com1 constrained	1182.50	432	14 vs. 11	0.03	1

(c) *Anglo/Eastern European*

1	Unconstrained (baseline/configural)	1526.94	418			
2	All factor loadings constrained (metric)	1578.93	434	2 vs. 1	51.99**	16
3	All TD items constrained	1541.18	420	3 vs. 1	14.24**	2
4	All JWD items constrained	1527.76	420	4 vs. 1	0.82	2
5	Model 4 and all Promo items constrained	1547.87	423	5 vs. 4	20.11**	3
6	Model 4 and all RS items constrained	1530.05	423	6 vs. 4	2.29	3
7	Model 6 and CB items constrained	1534.27	425	7 vs. 6	4.22	2
8	Model 7 and all Com items constrained	1539.82	427	8 vs. 7	5.55	2
9	Model 8 and all PMA items constrained	1544.49	429	9 vs. 8	4.67	2
10	Model 9 plus TD3 constrained	1556.72	430	10 vs. 9	12.23**	1
11	Model 9 plus TD1 constrained	1544.50	430	11 vs. 9	0.01	1
12	Model 11 plus Promo5 constrained	1544.79	431	12 vs. 11	0.29	1
13	Model 12 plus Promo4 constrained	1545.21	432	13 vs. 12	0.42	1
14	Model 13 plus Promo1 constrained	1564.69	433	14 vs. 13	19.48**	2

(d) *Anglo/Asian*

1	Unconstrained (baseline/configural)	1007.05	418			
2	All factor loadings constrained (metric)	1032.08	434	2 vs. 1	31.55*	16
3	All TD items constrained	1013.89	420	3 vs. 1	6.84*	2
4	All JWD items constrained	1008.04	420	4 vs. 1	0.99	2
5	Model 4 and Promo items constrained	1010.60	423	5 vs. 4	2.56	3
6	Model 5 and RS items constrained	1014.91	426	6 vs. 5	4.31	3
7	Model 6 and CB items constrained	1024.47	428	7 vs. 6	9.56**	2
8	Model 6 and Com items constrained	1015.45	428	8 vs. 6	0.54	2
9	Model 8 and PMA items constrained	1015.51	430	9 vs. 8	0.06	2
10	Model 9 plus TD3	1017.97	431	10 vs. 9	2.46	1
11	Model 10 plus TD1	1022.52	432	11 vs. 10	4.55*	1
12	Model 10 plus CB1	1018.43	432	12 vs. 10	0.46	1
13	Model 12 plus CB2	1027.54	433	13 vs. 12	9.11**	1

\* p < .05; \*\* p < .01

The same procedure was repeated for the remaining three pairings. Findings for the Anglo/Latin European pairing revealed one item in the factor Promo (Promo1) and one item in the Com factor (Com3) contributed to the slight non-equality between the groups (Table 3.10(b), models 12 and 13, respectively). For the Eastern European cluster, two non-equivalent items were found: TD3 and Promo1 (Table 3.10(c), models 10 and 14, respectively). Finally, despite the nearly equivalent results of the Anglo/Asian cluster pairing, it was determined that two items,



TD1 and CB2 were slightly non-equivalent across the groups (Table 3.10(d), models 11 and 13, respectively). Measurement invariance results, including fit indices and results of the  $\chi^2$  difference test are shown in Table 3.11 for the full measurement invariance and partial measurement invariance models. The partial measurement invariance models allow the non-equivalent items to vary across the two groups. It is notable how changing a few items results in models that are metrically invariant across cultures.

In general, the seven factor HPWP model was shown to be an acceptable representation of the cross-cultural data collected. In partial support of hypothesis 1 only six items were found to be non-equivalent across country clusters. Non-equivalent items indicate that respondents from each group have different perceptions about the item content (Byrne, 1993). Language might be one explanation for the non-equivalence. Although careful attention was given to the translation of surveys, back translation is often insufficient to avoid error (Hunt & Bhopal, 2003). First, the bilingual individuals who translate the surveys are not always representative of those being surveyed. This can lead to surveys using overly formal language (Hendricson, Russell, Prihoda, Jacobson, Rogan, & Bishop, 1989). In addition to the definition of words being unclear, the use and content of items may be considered inappropriate or cause confusion (Hunt & Bhopal, 2003). A second common cause of variance is culture. In the following section, we explore cultural characteristics that might help shed light on the variance encountered in our model.

Table 3-11: Measurement Invariance Results across Four Cluster Pairings

(a) *Anglo/Latin American*

	Baseline	Full Measurement Invariance	Partial Measurement Invariance*
$\chi^2$	1181.88	1242.7	1192.26
df	418	434	430
$\Delta\chi^2$		60.82	10.38
$\Delta df$		16	12
$p$		0.000	0.583
NFI	0.92	0.91	0.92
CFI	0.95	0.94	0.95
RMSEA	0.04	0.04	0.04

\* Allowing TD1, Promo1, CB2, and PMA3 to vary

(b) *Anglo/Latin European*

	Baseline	Full Measurement Invariance	Partial Measurement Invariance*
$\chi^2$	1162.76	1197.59	1182.5
df	418	434	430
$\Delta\chi^2$		34.83	19.74
$\Delta df$		16	12
$p$		0.004	0.072
NFI	0.92	0.91	0.91
CFI	0.95	0.94	0.94
RMSEA	0.04	0.04	0.04

\* Allowing Promo1 and Com3 to vary

(c) *Anglo/Eastern European*

	Baseline	Full Measurement Invariance	Partial Measurement Invariance*
$\chi^2$	1526.94	1578.93	1545.21
df	418	434	430
$\Delta\chi^2$		51.99	18.27
$\Delta df$		16	12
$p$		0.000	0.108
NFI	0.91	0.90	0.91
CFI	0.93	0.93	0.93
RMSEA	0.05	0.05	0.05

\* Allowing TD3 and Promo1 to vary

(d) *Anglo/Asian*

	Baseline	Full Measurement Invariance	Partial Measurement Invariance*
$\chi^2$	1007.05	1032.08	1018.43
df	418	434	430
$\Delta\chi^2$		25.03	11.38
$\Delta df$		16	12
$p$		0.069	0.500
NFI	0.89	0.89	0.89
CFI	0.93	0.93	0.93
RMSEA	0.04	0.04	0.04

\* Allowing TD1 and CB2 to vary

***Culture as explanation for non-invariance.*** Culture describes the collective values, beliefs, and assumptions of a group of individuals (Hofstede, 1993). It impacts what individuals think, how they feel, and what they do (Garcia, Posthuma, & Roehling, 2009). Hofstede (1980) referred to culture as the “collective programming of the mind which distinguishes the members of one human group from another” (p. 25). Culture helps people make sense of their environment. It is central to how individuals understand and approach work and how they expect to be treated at work (Newman & Nollen, 1996). Given the vast differences in culture across our five country clusters, it is not surprising that some items were non-equivalent.

The Anglo/Latin American pairing and the Anglo/Asian pairing had two non-equivalent items in common: CB2 (formal performance appraisal for pay increases) and TD1 (extensive training). These results are consistent with the differences in individualism and power distance within the pairings. The Anglo cluster is highly individualistic. In this type of culture, individual goals and accomplishments are seen as independent from those of group members or the group as a whole (Markus & Kitayama, 1991; Schwartz, 1992; Hofstede, 1980). Further, decisions in individualist cultures are based on rationality and cost and benefit calculations (Kim, Triandis, Kâğıtçıbaşı, Choi & Yoon, 1994). Thus, it is not surprising that using performance appraisals for pay increases is conceptualized differently across these groups. On the other hand, in collectivistic cultures, like those of the Latin American and Asian clusters, individual goals are compatible with the goals of the group. Likewise, behaviors in collectivistic cultures tend to be based on responsibilities and obligations to the group (Gelfand, Bhawuk, Nishii, & Bechtold, 2004; Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976). Individuals in these cultures are likely to have a preference for training (Hofstede, 2001). Thus, the difference in perception across these groups, regarding extensive training, is consistent with these traits.

Item PMA3 asks about the frequency of performance appraisal meetings. This item was found to be non-equivalent across the Anglo and Latin American pairing. Different perceptions regarding this item can be understood through cultural differences in collectivism as well as power distance. In collectivistic cultures, decisions are based on relationships and the needs of others (Kim et al. 1994). In cultures with high power distance, like the countries that make up the Latin American cluster, the unequal distribution of authority, information, and other resources is both expected and accepted. Performance appraisal meetings are typically held between employees and their supervisor. Therefore, it is no wonder that the value differences placed on relationships and on hierarchy between the Anglo and Latin American clusters leads to different interpretations of this item. Power distance can also help to explain the marginal non-equivalence of Com3 (employee input and suggestion processes) between Anglo and Latin European groups. In cultures with high power distance asking employees for feedback and input is perceived differently than it is in cultures where equality between hierarchies is the norm.

Promo1 (employees are promoted from within the organization) was found to be non-equivalent across three of the four cluster pairings: Anglo/Latin American, Anglo/Latin European, and Anglo/Eastern European. The cultural differences that best explain the non-equivalence of this item are performance orientation and long-term orientation. Performance orientation describes the degree to which individuals in a culture are focused on achieving challenging goals (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Individuals in high performance-oriented cultures view achievement as a central career goal and are driven to perform in order to meet this goal. In these cultures, performance is rewarded. On the other hand, in low performance-oriented cultures, rewards are based on the individual themselves and not simply on their performance. In these cultures, promotions are more likely to be awarded

based on age, experience, education, and social status (House et al., 2004). The Anglo cluster is higher on performance orientation than the Latin American cluster, so it is likely that individuals across these two cultures have different conceptualizations of promotions being offered to employees within the company. In cultures with long-term orientation, like those of Latin European and Eastern European countries, individuals are focused on the future. The values of learning, adaptability, and investing are viewed as important traits in the workplace (Hofstede & Minkov, 2010). Meanwhile, in short-term oriented cultures, like the Anglo cluster, the achievements and rights of workers are prioritized. This difference in thinking can explain why Anglo and Eastern European clusters have alternate perceptions of the extent that promotions are awarded to individuals from within the company.

Finally, item TD3, which asks about the extent of training for job or organization-specific skills was non-equivalent across the Anglo and Eastern European clusters. One explanation for the non-invariance in this item might be the difference in uncertainty avoidance between the two clusters. Individuals in high uncertainty avoidance countries, like those included in the Eastern European cluster, have a strong preference for structure, stability, and security (Hofstede, 1980; Erez, 2010). In these cultures, risk is avoided by strictly following policies and procedures. On the other hand, individuals in cultures low on uncertainty avoidance, like the Anglo cluster, tend to be more entrepreneurial and place higher value on achievement (Hofstede, 1980; Swierczek & Ha, 2003). Thus, individuals who are concerned with increasing certainty and security will interpret skills training differently than those who are more focused achievement.

***Reliability and Validity.*** Table 3.12 shows the alpha coefficients for each of the seven factors in each country cluster. Of the 35 alpha coefficients, only three are below .70 (CB in Latin America and Asia and JWD in Asia). Interestingly, in all clusters, the highest correlation

was between PMA and another factor. Similar to the U.S.-only sample, in the Anglo and Eastern European clusters, PMA and Com had the highest correlation. In the Latin American and Latin European clusters, PMA and CB had the highest correlation. In the Asian cluster, PMA and Promo had the highest correlation.

Table 3-12: Descriptive Statistics for Seven Factor Model by Country Cluster

Anglo													
Factor	M	SD	1	2	3	4	5	6	7	95% CI		Factor loadings	
(1) Training & Development	3.40	1.02	0.88							0.85	0.89	0.87	0.82
(2) Job & Work Design	2.90	0.91	0.56	0.71						0.66	0.76	0.75	0.58
(3) Promotion	2.96	0.92	0.63	0.63	0.85					0.82	0.87	0.80	0.82
(4) Recruitment & Selection	3.66	1.07	0.53	0.46	0.57	0.85				0.82	0.87	0.82	0.75
(5) Compensation & Benefits	3.12	1.24	0.38	0.55	0.50	0.29	0.76			0.76	0.72	0.65	0.79
(6) Communication	3.45	1.12	0.60	0.65	0.72	0.61	0.48	0.80		0.77	0.83	0.75	0.81
(7) Performance Mgmt. & Appraisal	3.37	1.16	0.62	0.61	0.70	0.62	0.49	0.77	0.87	0.84	0.89	0.85	0.88
Alpha coefficients are on the diagonal													
Latin American													
Factor	M	SD	1	2	3	4	5	6	7	95% CI		Factor loadings	
(1) Training & Development	2.84	0.87	0.86							0.84	0.88	0.92	0.85
(2) Job & Work Design	2.59	0.79	0.55	0.76						0.72	0.79	0.73	0.64
(3) Promotion	2.59	0.87	0.63	0.58	0.88					0.86	0.89	0.87	0.85
(4) Recruitment & Selection	3.56	0.93	0.53	0.46	0.54	0.88				0.86	0.89	0.85	0.79
(5) Compensation & Benefits	3.03	0.90	0.57	0.63	0.68	0.58	0.66			0.61	0.70	0.56	0.56
(6) Communication	2.77	1.05	0.62	0.59	0.69	0.63	0.69	0.83		0.80	0.85	0.81	0.78
(7) Performance Mgmt. & Appraisal	2.90	0.88	0.66	0.64	0.79	0.65	0.86	0.80	0.85	0.83	0.87	0.76	0.83
Alpha coefficients are on the diagonal													
Latin European													
Factor	M	SD	1	2	3	4	5	6	7	95% CI		Factor loadings	
(1) Training & Development	3.45	0.92	0.88							0.86	0.89	0.90	0.81
(2) Job & Work Design	2.93	0.81	0.44	0.74						0.71	0.77	0.77	0.59
(3) Promotion	2.77	0.86	0.63	0.54	0.84					0.82	0.86	0.83	0.74
(4) Recruitment & Selection	3.71	0.95	0.58	0.42	0.56	0.83				0.80	0.85	0.70	0.78
(5) Compensation & Benefits	3.26	1.07	0.52	0.50	0.61	0.51	0.75			0.72	0.78	0.66	0.70
(6) Communication	3.35	1.03	0.59	0.54	0.58	0.62	0.56	0.79		0.76	0.81	0.78	0.68
(7) Performance Mgmt. & Appraisal	3.15	0.87	0.62	0.52	0.71	0.63	0.74	0.69	0.83	0.81	0.85	0.84	0.78
Alpha coefficients are on the diagonal													

Eastern European															
Factor	M	SD	1	2	3	4	5	6	7	95% CI		Factor loadings			
(1) Training & Development	3.66	1.78	0.89							0.88	0.91	0.92	0.78	0.88	
(2) Job & Work Design	3.17	1.09	0.29	0.87						0.85	0.89	0.85	0.84	0.81	
(3) Promotion	3.19	1.16	0.55	0.31	0.93					0.92	0.94	0.90	0.89	0.90	0.83
(4) Recruitment & Selection	3.63	1.22	0.53	0.26	0.56	0.92				0.91	0.93	0.89	0.86	0.88	0.81
(5) Compensation & Benefits	3.31	1.19	0.44	0.35	0.49	0.47	0.87			0.85	0.88	0.77	0.87	0.84	
(6) Communication	3.37	1.26	0.12	0.37	0.37	0.34	0.24	0.88		0.86	0.89	0.84	0.83	0.86	
(7) Performance Mgmt. & Appraisal	3.36	1.12	0.47	0.38	0.68	0.59	0.47	0.78	0.88	0.86	0.90	0.80	0.89	0.84	
Alpha coefficients are on the diagonal															
Asian															
Factor	M	SD	1	2	3	4	5	6	7	95% CI		Factor loadings			
(1) Training & Development	3.35	0.90	0.81							0.77	0.84	0.88	0.75	0.67	
(2) Job & Work Design	3.10	0.77	0.63	0.63						0.56	0.70	0.57	0.57	0.67	
(3) Promotion	3.28	0.80	0.75	0.75	0.82					0.78	0.85	0.82	0.80	0.79	0.50
(4) Recruitment & Selection	3.57	0.77	0.62	0.62	0.60	0.77				0.72	0.80	0.79	0.68	0.69	0.49
(5) Compensation & Benefits	3.38	0.86	0.58	0.56	0.66	0.59	0.66			0.59	0.72	0.43	0.71	0.79	
(6) Communication	3.22	0.80	0.69	0.65	0.69	0.63	0.57	0.70		0.65	0.75	0.67	0.67	0.65	
(7) Performance Mgmt. & Appraisal	3.45	0.76	0.67	0.65	0.85	0.59	0.79	0.65	0.79	0.75	0.82	0.79	0.81	0.66	



Factor loadings for all five clusters are statistically significant at  $p < .001$ , supporting convergent validity (Anderson & Gerbing, 1988; Arnold & Reynolds, 2003). Discriminant validity was examined by comparing squared phi correlations with AVE estimates for each cluster (Table 3.13). For the Eastern European cluster, AVE estimates, which ranged from .69 to .77 exceeded all squared phi correlations. Therefore, discriminant validity of the measure was confirmed for this cluster. The remaining four clusters all had squared phi coefficients that exceeded one or more of AVE estimates, thereby requiring further discriminant validity testing in these clusters. Additional testing was conducted by merging the factors with the highest correlations and comparing the fit of the resulting six factor structure with the seven factor structure proposed.

Table 3-13: Squared Phi Correlations for Five Culture Clusters

Anglo							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.68						
(2) Job & Work Design	0.32	0.47					
(3) Promotion	0.39	0.39	0.59				
(4) Recruitment & Selection	0.28	0.21	0.33	0.58			
(5) Compensation & Benefits	0.15	0.30	0.25	0.09	0.52		
(6) Communication	0.36	0.42	0.51	0.38	0.23	0.58	
(7) Performance Mgmt. & Appraisal	0.38	0.37	0.49	0.39	0.24	0.59	0.69
Average variance extracted estimates are shown on the diagonal							
Latin American							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.62						
(2) Job & Work Design	0.30	0.51					
(3) Promotion	0.39	0.34	0.66				
(4) Recruitment & Selection	0.28	0.21	0.29	0.64			
(5) Compensation & Benefits	0.33	0.39	0.46	0.34	0.39		
(6) Communication	0.39	0.35	0.47	0.39	0.47	0.62	
(7) Performance Mgmt. & Appraisal	0.43	0.41	0.62	0.42	0.75	0.64	0.65
Average variance extracted estimates are shown on the diagonal							
Latin European							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.66						
(2) Job & Work Design	0.20	0.51					
(3) Promotion	0.39	0.30	0.58				
(4) Recruitment & Selection	0.34	0.18	0.31	0.55			
(5) Compensation & Benefits	0.27	0.25	0.37	0.26	0.50		
(6) Communication	0.35	0.29	0.34	0.38	0.31	0.55	
(7) Performance Mgmt. & Appraisal	0.39	0.27	0.50	0.40	0.55	0.48	0.62
Average variance extracted estimates are shown on the diagonal							

Eastern European							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.69						
(2) Job & Work Design	0.08	0.69					
(3) Promotion	0.30	0.09	0.77				
(4) Recruitment & Selection	0.28	0.07	0.31	0.74			
(5) Compensation & Benefits	0.19	0.13	0.24	0.22	0.69		
(6) Communication	0.01	0.14	0.13	0.11	0.06	0.71	
(7) Performance Mgmt. & Appraisal	0.22	0.14	0.46	0.35	0.22	0.60	0.71

Average variance extracted estimates are shown on the diagonal

Asian							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.51						
(2) Job & Work Design	0.40	0.37					
(3) Promotion	0.57	0.56	0.55				
(4) Recruitment & Selection	0.38	0.38	0.36	0.45			
(5) Compensation & Benefits	0.34	0.31	0.43	0.35	0.44		
(6) Communication	0.47	0.42	0.48	0.39	0.32	0.44	
(7) Performance Mgmt. & Appraisal	0.45	0.42	0.72	0.35	0.63	0.42	0.57

Average variance extracted estimates are shown on the diagonal

For the Anglo cluster, squared phi coefficients for the pairing Com/PMA ( $\phi^2 = .59$ ) exceeded the variance extracted estimate for Com (.58). Therefore, we examined an alternative six factor model in which Com and PMA were combined into a single factor. This six factor model showed a significant reduction in fit when compared to the seven factor model ( $\Delta\chi^2_{(6)} = 129.83$ ). Thus, discriminant validity for the seven factor model was confirmed for the Anglo cluster. In the Latin American cluster the squared phi correlations for CB/Com, CB/PMA, and PMA/Com all exceeded the AVE for one or both of their factors. The three suspect pairings were further examined by combining their respective factors and comparing the resultant model to the seven factor structure. As shown in Table 3.14, the fit for each of the six factor alternative models for was significantly reduced when compared to the fit of the seven factor model. Thus, there is evidence of discriminant validity for the seven factor model is the Latin American cluster. However, it is important to note that the AVE for CB is below .50 for this cluster, indicating that the variance due to measurement error for this factor is greater than the variance it explains. For the Latin European cluster, the squared phi correlation for CB/PMA ( $\phi^2 = .55$ ) exceeded the AVE for CB (.50). The alternative six factor models, which combined the pairing, showed a significantly worse fit to the model when compared with the seven factor model ( $\Delta\chi^2_{(6)} = 159.11$ ). The Asian cluster had eight squared phi correlations which exceeded the AVE for one or both of their respective factors (Table 3.13). Alternative six factor models were developed by combining the factors in each suspect pairing into the same factor. When compared with the seven factor model, the fit for all eight six factor models was significantly worse than the fit of the seven factor model (Table 3.14) supporting discriminant validity of the proposed model. However, four of the factors in the Asian cluster (JWD, RS, CB, and Com)

have AVEs less than .50 as recommended by Fornell and Larcker (1981), which poses a concern for the effectiveness of these factors in the Asian cluster.

Table 3-14: Alternate Model Comparisons for Four Country Clusters

Model tested	$\chi^2$	df	$\Delta\chi^2$ from Model 1*	$\Delta df$
<i>(a) Anglo</i>				
1 Seven factor model	487.44	209		
2 Com and PMA combined	617.27	215	129.83	6
<i>(b) Latin American</i>				
1 Seven factor model	694.43	209		
2 CB and Com combined	843.70	215	149.27	6
3 CB and PMA combined	729.10	215	34.68	6
4 PMA and Com combined	866.76	215	172.33	6
<i>(c) Latin European</i>				
1 Seven factor model	675.25	209		
2 CB and PMA combined	834.36	215	159.11	6
<i>(d) Asian</i>				
1 Seven factor model	519.56	209		
2 TD and Promo combined	678.66	237	159.10	6
3 JWD and Promo combined	560.53	215	40.97	6
4 JWD and RS combined	604.71	215	85.15	6
5 JWD and Com combined	567.03	215	47.47	6
6 JWD and PMA combined	584.54	215	64.98	6
7 Promo and Com combined	599.21	215	79.66	6
8 Promo and PMA combined	584.37	215	64.81	6
9 CB and PMA combined	566.92	215	47.36	6

\* All  $\chi^2$  differences are significant at  $p < .001$

In summary, the seven factor structure showed a significantly better fit than any of the alternative six factor models developed by combining highly correlated factor pairings into single factors. Together with the previous findings of discriminant validity with the U.S. calibration sample, strong support has been established for the discriminant validity of the seven factor model.

### ***3.5.3. Economic clusters***

Examining the HPWP measure across the five country clusters served to highlight interesting cross-cultural differences in perceptions of HPWPs. The factors that typically differentiate cultural groups from one another include religion, language, geography, ethnicity, and work related values and attitudes (Gupta et al., 2002). In this section, we examine the HPWP measurement instrument across countries based on economic factors. The first group includes those countries with emerging national economies, commonly referred to as BRICS countries (i.e., Brazil, Russia, India, China, and South Africa). The second group includes the remaining twelve countries in our sample. Examining HR strategies in BRICS countries is increasingly important. Currently, over 42% of the world's population is located in BRICS countries (2015 Revision of World Population Prospects). Further, economists predict that by 2050, the combined GDP of BRICS countries will surpass that of the seven largest developed economies (Ardichvili, Zavyalova, & Minina, 2012).

With different politics, cultures, and languages, the five BRICS countries form an unlikely group (Armijo, 2007). However, it is their increasing influence and common goals that justify analyzing these countries together (Stuenkel, 2015). The capabilities of BRICS countries, as indicated by the size and growth of their economies, deems them a rising power in international relations (Armijo, 2007). By 2030, the OECD predicts that China and India's GDP will make up 28 and 11 percent of the world's economy, respectively, while those of the U.S. and E.U. will decline to 18 and 12 percent, respectively (Stuenkel, 2015). As emerging economies, BRICS countries share a goal of making today's dominant countries accept a multilateral system consisting of equal rights for developed and emerging countries (Stuenkel, 2015). They have questioned the underlying principles of liberal order as well as how authority

in international institutions is allocated. Specifically, Brazil, India, and South Africa have been active in opposing existing hierarchies (Stuenkel, 2015). Current international laws often favor their originators and, together, the BRICS countries seek to change this and to level the playing field for all countries (Stuenkel, 2015). Together, their size, growth, and global influence make BRICS countries an important group to consider in international HRM research.

The 23-item seven factor model was estimated for each group independently. Results showed that the seven factor model fit the data well in both BRICS and non-BRICS countries (see Table 3.15). Next, measurement invariance of the seven factor structure across economic groups was examined using multi-group CFA models. In the first model, all parameters are allowed to vary freely across the two groups. Results of this baseline model showed good fit ( $\chi^2_{(460)} = 2174.27$ ; NFI = .94; CFI = .95; RMSEA = .039; SRMR = .039), indicating that the measure has configural invariance across the two groups. The second multi-group CFA model tested for metric invariance by constraining the factor loadings to be equal across the two groups. The  $\chi^2$  difference test showed only a minimal change in fit ( $\Delta\chi^2_{(16)} = 29.95, p > .015$ ), suggesting minimal metric variance across the two groups. The final invariance test was conducted by maintaining the equality of factor loadings from the previous model and further constraining the intercepts to be equal across the two groups. Comparing this model with the baseline model using the  $\chi^2$  difference test showed a significant change in fit ( $\Delta\chi^2_{(32)} = 294.01, p < .001$ ). However, the change in CFI between the two models did not change by more than .01 ( $\Delta\text{CFI} = .007$ ), meeting the invariance criteria developed by Cheung and Rensvold (2002). Despite the contradictory results for scalar invariance, metric invariance was supported across the two groups. Table 3.16 shows both  $\Delta\chi^2$  and  $\Delta\text{CFI}$  invariance results.

Table 3-15: CFA Fit Indices for BRICS and Non-BRICS Clusters Separately

Cluster	n	$\chi^2$	df	NFI	CFI	RMSEA	SRMR
(1) BRICS	776	638.09	209	0.94	0.96	0.05	0.04
(2) Others	2019	1536.15	209	0.94	0.95	0.06	0.04

Table 3-16: Measurement Invariance Results across BRICS and Non-BRICS Groups

	Configural Invariance Model	Metric Invariance Model	Scalar Invariance Model
$\chi^2$	2174.27	2204.22	2468.27
df	418	434	450
$\Delta\chi^2$		29.95	294.00
$\Delta df$		16	32
$p$		0.018 <sup>a</sup>	0.000
NFI	0.941	0.940	0.933
CFI	0.952	0.951	0.945
$\Delta CFI$		.001 <sup>b</sup>	.007 <sup>b</sup>
RMSEA	0.04	0.04	0.04

Values for  $\Delta\chi^2$ ,  $\Delta df$ , and  $\Delta CFI$  represent comparisons with baseline model.

a. Invariance supported when  $\Delta\chi^2$  is not significant.

b. Invariance supported when  $\Delta CFI$  does not exceed .01 (Chueng & Rensold, 2002)



**Reliability and Validity.** The 23 items in the HPWP measure were examined in their respective factor for each group. As shown in Table 3.17, all item-to-total correlations exceeded .50 as recommended by Gerbing and Anderson (1998). Further, all fourteen alpha coefficients exceed the recommended value of .70 (Nunnally, 1978; Nunnally & Bernstein, 1994). Factor loadings were statistically significant at  $p < .001$  for both BRICS and non-BRICS groups, confirming convergent validity (Anderson & Gerbing, 1988; Arnolds & Reynolds, 2003). Discriminant validity was tested by comparing the AVE for each factor with squared phi correlations which included that factor. As shown in Table 3.18, the squared phi correlation for PMA/Com ( $\phi^2=.71$ ) exceeded the AVEs for both Com (.56) and PMA (.66) factors. To further test discriminant validity of the seven factor structure for the BRICS group, the factors in the suspect paring were combined into a single factor, forming a six factor model. The fit of this alternative model showed a significant reduction in fit when compared with the seven factor model ( $\Delta\chi^2_{(6)} = 102.61, p < .001$ ), supporting discriminant validity. For the non-BRICS group, the squared phi correlation for CB/PMA ( $\phi^2=.51$ ) exceeded the AVE for CB (.48). Additional discriminant validity tests were conducted by combining these two factors to form a six factor model. Once again the alternative model showed a significant reduction in fit from the proposed seven factor model ( $\Delta\chi^2_{(6)} = 471.41, p < .001$ ), thus discriminant validity of the proposed model is supported for the non-BRICS group. However, it is important to note that the AVE for factor CB (.48) was below the recommended value of .50 (Fornell & Larcker, 1981).

Table 3-17: Descriptive Statistics for Seven Factor Model by Economic Cluster

BRICS															
Factor	M	SD	AVE	1	2	3	4	5	6	7	95% CI		Item to total correlation		
(1) Training & Development	3.39	1.06	0.67	0.89							0.87	0.90	0.76	0.82	0.76
(2) Job & Work Design	3.05	0.97	0.56	0.31	0.79						0.76	0.81	0.58	0.66	0.65
(3) Promotion	3.11	1.01	0.66	0.46	0.41	0.88					0.87	0.90	0.60	0.78	0.81
(4) Recruitment & Selection	3.50	1.05	0.65	0.38	0.19	0.41	0.88				0.87	0.90	0.71	0.77	0.74
(5) Compensation & Benefits	3.28	1.08	0.58	0.37	0.40	0.41	0.35	0.79			0.76	0.82	0.68	0.69	0.54
(6) Communication	3.15	1.03	0.56	0.38	0.29	0.58	0.42	0.39	0.79		0.76	0.81	0.60	0.65	0.63
(7) Performance Mgmt. & Appraisal	3.16	1.10	0.66	0.41	0.31	0.65	0.45	0.49	0.84	0.85	0.83	0.87	0.68	0.79	0.70

Non-BRICS															
Factor	M	SD	AVE	1	2	3	4	5	6	7	95% CI		Item to total correlation		
(1) Training & Development	3.31	1.01	0.659	0.87							0.86	0.88	0.74	0.80	0.74
(2) Job & Work Design	2.87	0.874	0.537	0.58	0.77						0.76	0.79	0.56	0.68	0.59
(3) Promotion	2.83	0.939	0.646	0.70	0.60	0.88					0.87	0.89	0.65	0.78	0.77
(4) Recruitment & Selection	3.69	0.983	0.596	0.61	0.51	0.63	0.85				0.84	0.86	0.65	0.72	0.71
(5) Compensation & Benefits	3.24	1.13	0.484	0.55	0.56	0.64	0.54	0.74			0.72	0.76	0.62	0.55	0.53
(6) Communication	3.33	1.08	0.631	0.55	0.65	0.59	0.56	0.51	0.84		0.82	0.85	0.71	0.71	0.67
(7) Performance Mgmt. & Appraisal	3.18	1.07	0.662	0.69	0.65	0.76	0.69	0.72	0.73	0.85	0.84	0.86	0.74	0.74	0.68

Alpha coefficients are on the diagonal

Table 3-18: Squared Phi Correlations and AVE for Economic Clusters

BRICS							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.67						
(2) Job & Work Design	0.09	0.56					
(3) Promotion	0.22	0.17	0.66				
(4) Recruitment & Selection	0.15	0.04	0.16	0.65			
(5) Compensation & Benefits	0.13	0.16	0.17	0.12	0.58		
(6) Communication	0.14	0.08	0.34	0.18	0.15	0.56	
(7) Performance Mgmt. & Appraisal	0.17	0.10	0.43	0.21	0.24	0.71	0.66

Non-BRICS							
Factor	1	2	3	4	5	6	7
(1) Training & Development	0.66						
(2) Job & Work Design	0.34	0.54					
(3) Promotion	0.50	0.36	0.65				
(4) Recruitment & Selection	0.38	0.26	0.39	0.60			
(5) Compensation & Benefits	0.30	0.31	0.41	0.29	0.48		
(6) Communication	0.30	0.42	0.34	0.31	0.26	0.63	
(7) Performance Mgmt. & Appraisal	0.48	0.42	0.57	0.47	0.51	0.54	0.66

Average variance extracted estimates are shown on the diagonal

### **3.6. Nomological Validity**

To further establish measurement validity, the seven HPWP factors were investigated within a larger nomological network of theoretically related antecedents and outcomes, which have been extensively studied in the SHRM literature. These include strategy, social capital, and human capital. Nomological validity could not be assessed for all countries in our sample as data for the related constructs were only collected for five countries: U.S., India, China, South Africa, and Vietnam. These five countries make up two of the country clusters previously examined: the Anglo cluster and the Asian cluster. In addition to further validating the seven factor structure developed earlier, assessing nomological validity of the seven factor HPWP indicator across these two culture clusters allows us to examine culture as a contextual factor associated with the selection and effectiveness of HPWPs. Culture impacts the attitudes and behaviors of individuals and thus influences the effectiveness of HR practices (Earley, 1993; Erez, 1994). Therefore, we expect to find differences in the relations between antecedents and outcomes of HPWPs across the two groups.

First, employing the behavioral perspective of HR, we propose that the implementation of HPWPs is correlated with the importance of innovation to an organization's success. Next, using the resource based view (RBV) of the firm we argue that the degree to which HPWPs are used in an organization has implications for the level of organizational resources manifested in a firm's employees (Boselie, et al., 2005). Specifically, we hypothesize that certain HPWPs are correlated with human capital and social capital. Results are discussed from a cultural values perspective.

### ***3.6.1. Strategic impact on HPWPs***

Literature on the association between strategy and HRM implementation is mixed. Several studies find a positive association between differentiation strategies and the use of high-commitment/high-performance/high-involvement HR strategies (Arther, 1992; Jackson, Schuler & Rivero, 1989; Osterman, 1994; Chen, Lawler & Bae, 2005; Lawler, Chen, Wu, Bae & Bai, 2011; Camps & Luna-Arocas, 2009; Guthrie, Spell & Nyamori, 2002). However, other studies do not (Huselid, 1995; Bae & Lawler, 2000; Hsu, Lin, Lawler & Wu, 2007). The majority of these studies are based on popular strategy typologies found in the literature, namely Porter's (1980) differentiation, cost leadership typology or Miles and Snow's (1984), prospector, defender, and analyzer typology. Critics argue that the views of strategy proposed by these typologies are antiquated and narrow in their assumptions of organizational strategic positioning (Wright & Snell, 1998; Chadwick & Cappeli, 1999; Ferris, Hochwater, Buckley, Harrell-Cook, & Frink, 1999). The present study refrains from using a strategy typology, instead using continuous measures for two types of strategic priorities: innovation and low cost.

### ***3.6.2. Behavioral psychology perspective***

The behavioral psychology perspective of HR is a framework that has been used to connect a firm's competitive strategy with its HR strategy. Grounded in role theory, the central idea is that employees' role behaviors are important to the successful implementation of an organization's competitive strategy (Schuler & Jackson, 1987). This perspective assumes that employee behaviors are a reflection of situational factors and that the choices that managers make regarding policies and practices have the power to shape employee behaviors (Jackson, 2013 "encyclopedia of management theory). Therefore, managers choose HPWPs that align with the priorities pursued by the organization and which reinforce the characteristics, skills,

attitudes, and behaviors that are needed for employees to successfully contribute to implementing the organization's strategy (Jackson et al., 1989; Drazin & Van de Ven, 1985).

***Strategic priorities and HPWPs.*** One of the most important capabilities that innovative companies must possess is the ability to respond to changes in the environment. This requires the ability to gather and make sense of environmental information, distribute the information throughout the organization, and quickly form and implement an appropriate response. Employees who have the knowledge and skills needed to perform many tasks are essential. Organizations that rely on innovation will implement HPWPs that help attract highly skilled employees. This includes competitive compensation and benefits practices as well as the use of broad recruitment and selection practices.

The importance of knowledge transfer in innovative organizations makes the retention of employees essential. While explicit knowledge is easily communicated in handbooks and manuals, tacit knowledge takes time and is gained through application (Kogut & Zander, 1992). Once inside the organization, practices aimed at retaining high performing employees should be implemented. Innovative organizations will choose HPWPs that increase employee motivation, such as autonomy and opportunities for promotion. Employees in innovative organizations are encouraged to use discretionary behaviors for the benefit of the organization. In order to motivate employees to do this, work must be designed in ways that give employees autonomy over their work and encourage them to make decisions and take risks. Performance appraisals are one way to communicate to employees what behaviors are valued in the organization.

In innovative companies, employees must have access to important information when making decisions. This information might come from the environment, from upper management, co-workers, or employees in other parts of the organization. For this reason, in

innovative companies, communication practices that encourage the sharing of information across all levels of the organization are more likely. This includes implementing performance management and appraisal practices that assist in managing and developing employees as well as formal information sharing programs that assist the flow of information throughout the organization.

*H2: Importance of innovation will be positively correlated to RS, CB, JWD, PMA, Promo, and Com factors.*

On the other hand, in organizations where low costs are important to success, efficiency will be prioritized. In these organizations, jobs are typically standardized and well-defined, requiring fewer skills. Due to the high supply of low-skilled workers, turnover cost is reduced for these organizations, resulting in lower wages. Therefore, no significant correlation is hypothesized for low costs and HPWPs.

### **3.6.3. Resource-based view**

The RBV perspective (Barney, 1991) views organizations as networks of resources and capabilities (Wernerfelt, 1984; Rumelt, 1984). When these resources and capabilities create value for the firm, and are difficult for competitors to imitate, they have the potential to become a sustained competitive advantage for the controlling firm (Barney, 1991; Dierickx & Cool, 1989). Firm resources include all inputs used in the production of goods and services (Amit & Schoemaker, 1993). Several categories are used in the literature to classify firm resources: physical capital, human capital, social capital, and organizational capital (Barney, 1991; Snell et al., 2001). Physical capital includes firm resources like buildings, machinery, geographic location, and raw materials. Human capital describes the knowledge, skills, expertise, and

insight of individual employees of the firm. Social capital describes the value of network relationships in creating, sharing, and integrating individual knowledge (Nahapiet & Ghoshal, 1998). Finally, the structures, systems and processes within a firm fall under organizational capital (Barney, 1991). Physical and organizational capital are not employee-centered and thus are not influenced by HR systems. Rather, they are owned by organizations (Youndt & Snell, 2004). However, human capital and social capital are employee-centered and are directly impacted by HR systems (Youndt & Snell, 2004).

RBV has been critically important in the development of SHRM. It shifted the focus in strategy from external factors, such as industries and positioning, to internal resources. This shift gave legitimacy to the idea that employees are of strategic importance to firms. At its base, the RBV perspective of HR views employees as an important determinant of organizational performance and the most valuable source of competitive advantage (Boselie et al., 2005). Within an organization, employees, are the resources that control and guide all the other resources held by the company, both tangible and intangible (Mathis & Jackson, 2011).

***HPWPs and human capital.*** Human capital consists of the knowledge and skills of employees within an organization. It also incorporates economic and strategic management principles, such as capital accumulation, investment, value creation, and resource distribution (Snell et al., 2001; Youndt & Snell, 2004; Dierickx & Cool, 1989). In order to gain economic advantage from the skills, knowledge, and abilities of employees, the firm must have an HR approach that focuses on attracting employees with high knowledge and skills and developing long-term relationships with those employees (Youndt & Snell, 2004; Rodriguez & Ventura, 2003). Compensation and benefits practices can attract employees to the company and motivate them to behave in ways that the organization values. Providing employees with training and



development opportunities are also important for increasing employee skills and for retaining valuable employees. Job and work design practices can also enhance human capital. For instance, decentralized participative decision making and autonomy encourage employees to work through problems, increasing critical thinking skills. They also communicate to employees that the organization trusts them to make decisions that are in the best interest of the company. However, in order for decentralized decision making and autonomy to have a positive impact on human capital, employees, must feel confident that they have the access to the information necessary to make good decisions and to be successful. The increased retention that is expected from such HR practices will increase the value that the organization derives from the knowledge, skills, and abilities of employees, or its human capital.

*Hypothesis 3: CB, TD, JWD, and Com will be positively correlated to human capital.*

**HPWPs and social capital.** Social capital refers to the tacit exchanges that enable the sharing and integration of knowledge within an organization, as well as with outside partners (Youndt & Snell, 2004). Certain HR practices can encourage employees in the organization to develop relationships across groups, departments, and functions and use those relationships to benefit the organization (Snell et al., 2001; Nahapiet & Ghoshal, 1998). Establishing long-term relationships, along with effective communication, is at the heart of social capital. Promoting employees from within allows them to envision a future with the company. Employees who stay with a company develop networks of relationships that ultimately lead to greater access to information and increased efficiency. This, along with practices that promote consistent communication serve to elevate trust within the organization. This trust increases employees' willingness to interact, cooperate, and share information (Leanna & VanBuren, 1999). The

increased cooperation and retention that stems from these practices leads to stable relationships and strong organizational norms (Leanna & Van Buren, 1999).

*Hypothesis 4: Promo and Com will be positively correlated to social capital.*

#### **3.6.4. Measures**

**Strategy.** Strategy was assessed using two scales, which asked respondents to rate the importance of innovation and of low costs to the success of the organization. The importance of innovation was measured using four items, which asked whether the following have been important to the success of the organization: “introduction of new products or services,” “offering new features in our products or services,” “being the first to offer something new in the marketplace,” “offering products or services that are different than our competitors.” Four items were also used to measure the importance of low cost. These measured asked how important the following had been to the success of the organization: “keeping our labor costs low,” “keeping our material consumption low,” “keeping our energy consumption low,” “keeping our inventory costs low.” Items from both scales were measured on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

**Organizational resources.** Human capital and social capital were both assessed using scales developed by Youndt and Snell (2004). Human capital ( $\alpha = .81$ ) asks whether respondents agree with the following statements about their organization: “our employees are highly skilled,” “our employees are widely considered the best in our industry,” “our employees are creative and bright,” “our employees develop new knowledge and ideas.” Social capital ( $\alpha = .88$ ) asks respondents whether they agree with the following statements about their organization: “our employees are skilled at collaborating with each other to diagnose and solve problems,” “our

employees share information and learn from one another,” “our employees interact and exchange ideas with people from different areas of the company,” “our employees partner with customers, suppliers, alliance partners, etc., to develop solutions,” “our employees apply knowledge from one are of the company to problems and opportunities that arise in another.” Items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### ***3.6.5. Findings***

Correlation of the seven HPWP factors with antecedents and outcomes are shown in Table 3.19. Hypotheses were tested using Pearson’s correlation coefficient. Consistent with hypothesis 2, the importance of innovation was significantly positively related to CB, PMA, and Promo for both Anglo and Asian clusters. Although not significant, positive correlations were also found between innovation and RS and Com factors for both groups. Interestingly, JWD had very different results across the two groups. For the Anglo cluster, as hypothesized, JWD was significantly positively related to innovation. However, for the Asian cluster, innovation and JWD were negatively correlated, though not significant. This inconsistency is most likely due to the difference in power distance between the two clusters. Power distance describes the degree to which individuals in a country expect and accept the unequal distribution of power (Hofstede & Bond, 1984). In countries with high power distance, individuals expect the unequal distribution of resources, including authority. Employees in these cultures expect managers to make decisions. For HR practices to be effective, researchers argue that they must align with culture (Hofstede, 1993; Kirkman & Shapiro, 1997). In countries high in power distance, HR practices like decentralized participative decision making and employee discretion are not in alignment with cultural values.

Another explanation could be the type of jobs and industries in each of the clusters. The Anglo cluster is made up of the U.S. and South Africa which are both economies driven in large part by knowledge and services. India and China, on the other hand, both emerging economies, are primary and secondary economies, driven by primarily by agriculture and manufacturing, respectively (Ardichvili et al., 2012). Along with cultural values, the difference in economies between the two groups can lead to very different jobs responsibilities, regardless of whether the organization itself relies on innovation.

Hypothesis 3 found mixed support. For the Anglo cluster, as expected, JWD and Com were both significantly correlated to human capital. However CB and TD were not. For the Asian cluster, CB and TD were significantly positively correlated with human capital, but JWD and Com were not. In fact, a negative relationship was found between JWD and human capital for the Asian cluster, though not significant. Again, the high power distance of the Asian cluster, along with economic factors, could be the reason that JWD practices, which include autonomy and participative decision making are not positively correlated with human capital for this group. Individualism might be a factor in the lack of results for TD in the Anglo cluster. In highly individualistic countries, employees tend to be results-driven and set goals based on achievement, whereas in cultures with low individualism, group success is prioritized over individual accomplishments. Therefore, training directed at improving performance and developing job or organization specific skills are more likely to be provided in low individualist countries.

Finding full support of hypothesis 4, Promo and Com were significantly correlated with social capital in both Anglo and Asian clusters. Further, in the Asian cluster, TD, RS, CB, and PMA were also significantly positively related to social capital. These findings can be explained

by the high collectivistic culture of the Asian group. In collectivistic cultures, individuals act cohesively to form strong ties with their group members (Triandis, 1996). Therefore, social capital is something that might be inherent to collectivistic cultures regardless of varying degrees of HPWPs.

Table 3-19: Correlation between HPWPs, Antecedents, and Outcomes

Variables	Culture	N	TD	JWD	Promo	RS	CB	Com	PMA
Importance of Innovation	Anglo	216	-.017	.152*	.144*	.078	.136*	.126	.141*
	Asian	334	.232**	-0.04	.223**	0.073	.217**	0.019	.234**
Importance of Low Cost	Anglo	216	.029	.061	.080	-.035	.044	.053	.032
	Asian	334	0.058	-.080	.128*	-.077	.165**	-.016	.192**
Human Capital	Anglo	225	0.009	.195**	.125	.103	0.076	.197**	.080
	Asian	334	.208**	-.018	.031	.073	.142**	.098	.043
Social Capital	Anglo	226	.087	0.05	.133*	.004	0.086	.159*	.085
	Asian	334	.157**	.037	.108*	.155**	.186**	.123*	.122*

\*p < .05, \*\* p < .01

#### **4. Discussion, Limitations, and Future Research**

The purpose of this project was to develop a comprehensive measure of HPWPs based on the taxonomy put forth by Posthuma and colleagues in 2013. The original taxonomy consisted of 63 HPWPs. Using EFA and CFA on a sample of respondents working in various industries in the U.S. led to a refined model of 23-items used to assess seven factors important to systems of HPWPs. Reliability and validity of the instrument was demonstrated.

Without a generalizable measure of HPWPs, research in SHRM will continue to be developed in silos, separated by the HR practices studied, industry, or country. Due to the continued growth in the field of international HRM, it is important that a comprehensive measure of HPWPs is meaningful across cultures. To ensure that the seven factor structure, developed with the U.S. sample, was useful outside the U.S., it was evaluated across five country clusters comprised of seventeen countries. In general, the seven factor HPWP model was shown to be an acceptable representation of the cross-cultural data collected. Further, the entire HPWP measurement instrument is shown to be completely metrically invariant when the CFI difference criteria was used. When invariance was judged using the more stringent,  $\chi^2$  difference test, all but six items were found to be invariant across the five clusters. Possible cultural explanations for the perceived differences of the six non-equivalent items was provided. However, it is also possible that these inconsistencies are an artifact of the data. Replication is encouraged to confirm or disprove the findings. The seven factor HPWP instrument was also examined across economic clusters of countries. Specifically, the five BRICS countries were combined into one group and the remaining twelve countries were in a second group. The HPWP measure provided good fit of the data and was determined to be completely metrically invariant across economic groups. To further test convergent and discriminant validity, the seven factor structure was

examined within a nomological network. The behavioral psychology of HR and RBV were used to predict relations between antecedents, outcomes, and the seven HPWP factors. Results indicate significant differences in relations across the two sampled groups, further supporting the impact of culture on HPWPs and the importance of a generalizable measure to the growing field of international SHRM.

This study has shown robust support for the generalizability and validity of the seven factor HPWP measure. However, the current study is not without limitations. First, the initial questionnaire that was administered to the U.S. sample, included all 63 HPWPs in Posthuma et al.'s taxonomy (2013). The qualitative investigation of the questionnaire, which resulted in the removal of 19 items, was conducted after the survey was administered, but prior to data analysis. Additional tests of the measure should be conducted in order to replicate our findings. Second, the U.S. data which was used to develop the measure was based on single source respondents. This limitation was not a concern in the non-U.S. data, in which multiple respondents per organization were surveyed. A third limitation is due to the small sample sizes of certain countries. For instance, Germany had a sample size of 112, well below the recommended five observations per item. Its small sample size required us to cluster Germany with countries with which it is not typically grouped. China and Vietnam also had small sample sizes of 24 and 120, respectively, requiring us to combine them with India into one cluster. For this reason, when evaluating cultural differences for explanations to non-equivalent items, we were careful to consider the culture of each country in each cluster. However, admittedly, the choice of groupings has a significant impact on findings. In the future, research examining country clusters based on characteristics other than culture and economics is encouraged. For instance, the level of human development of a country, or the level of investment in education might

impact employees' perception of certain HPWPs. In addition to further testing of the instrument itself, our hope is that future researchers can use the HPWP measure to better understand why and when employers use certain HPWPs, as well as how different practices are combined. Along with investigating the contextual factors that impact the selection of HPWPs, future research should ultimately aim to better understand the factors that influence their effectiveness.



## **5. Conclusion**

As businesses expand operations to more, and increasingly diverse, countries, the HRM environment grows in complexity. Most researchers and practitioners agree that international HRM cannot be addressed universally (Robert, Probst, Martocchio, Drasgow, & Lawler, 2000; Adler & Jelinek, 1986; Newman & Nollen, 1996; Hofstede, 1993). Due to cultural differences, HR practices will have varying degrees of effectiveness (Hofstede, 1991; Earley, 1993; Erez, 1994). In order to understand that variation, a comprehensive and generalizable measure of HPWPs is essential.

Cross-cultural research in any field seeks to understand the ways in which human societies are different (Javidan & Hauser, 2004). This study has started to answer this question for HPWPs. Further, using research on cultural values, we have attempted to answer why these differences exist. In providing the answers to these questions, this study lays a foundation for future researchers to better understand how these differences matter. The past few decades have seen great strides made toward understanding how HRM impacts organizational performance. Today SHRM continues to draw the interest of researchers and managers alike. However, the lack of an agreed-upon, comprehensive measure that is generalizable across organizations, industries, and cultures has hindered the development of knowledge in this area. This study set out to develop a measure of HPWPs that meets this need.

## References

- 2015 Revision of World Population Prospects. New York (2015). *United Nations, Department of Economic and Social Affairs, Population Division* (<http://esa.un.org/wpp/>, 4 April 2016).
- Adler, N. J., & Jelinek, M. (1986). Is “organization culture” culture bound? *Human Resource Management*, 25(1), 73-90.
- Aish, A. M., & Jöreskog, K. G. (1990). A panel model for political efficacy and responsiveness: An application of LISREL 7 with weighted least squares. *Quality and Quantity*, 24(4), 405-426.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14(1), 33-46.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.
- Ardichvili, A., Zavyalova, E., & Minina, V. (2012). Human capital development: comparative analysis of BRICs. *European Journal of Training and Development*, 36(2/3), 213-233.
- Armijo, L. E. (2007). The BRICs countries (Brazil, Russia, India, and China) as analytical category: mirage or insight? *Asian Perspective*, 31(4), 7-42.
- Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing*, 79(2), 77-95.
- Arthur, J. B. (1992). The link between business strategy and industrial relations systems in American steel minimills. *Industrial & Labor Relations Review*, 45(3), 488-506.
- Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37(3), 670-687.
- Aryee, S., Walumbwa, F. O., Seidu, E. Y., & Otaye, L. E. (2012). Impact of high-performance work systems on individual-and branch-level performance: Test of a multilevel model of intermediate linkages. *Journal of Applied Psychology*, 97(2), 287-300.
- Asmussen, C. G. (2009). Local, regional, or global? Quantifying MNE geographic scope. *Journal of International Business Studies*, 40(7), 1192-1205.
- Bae, J., & Lawler, J. J. (2000). Organizational and HRM strategies in Korea: Impact on firm performance in an emerging economy. *Academy of Management Journal*, 43(3), 502-517.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

- Bartel, A. P. (2004). Human resource management and organizational performance: Evidence from retail banking. *Industrial & Labor Relations Review*, 57(2), 181-203.
- Batt, R. (2002). Managing customer services: Human resource practices, quit rates, and sales growth. *Academy of Management Journal*, 45(3), 587-597.
- Becker, B., & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779-801.
- Begun, A. L., Murphy, C., Bolt, D., Weinstein, B., Strodthoff, T., Short, L., & Shelley, G. (2003). Characteristics of the Safe at Home instrument for assessing readiness to change intimate partner violence. *Research on Social Work Practice*, 13(1), 80-107.
- Beltrán-Martín, I., Roca-Puig, V., Escrig-Tena, A., & Bou-Llusar, J. C. (2008). Human resource flexibility as a mediating variable between high performance work systems and performance. *Journal of Management*, 34(5), 1009-1044.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588-606.
- Björkman, I., Fey, C. F., & Park, H. J. (2007). Institutional theory and MNC subsidiary HRM practices: evidence from a three-country study. *Journal of International Business Studies*, 38(3), 430-446.
- Boselie, P., Dietz, G., & Boon, C. (2005). Commonalities and contradictions in HRM and performance research. *Human Resource Management Journal*, 15(3), 67-94.
- Bowen, D. E., & Ostroff, C. (2004). Understanding HRM–firm performance linkages: The role of the “strength” of the HRM system. *Academy of Management Review*, 29(2), 203-221.
- Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: progressing the high-involvement stream. *Human Resource Management Journal*, 19(1), 3-23.
- Brislin, R. W. (1980). Cross-cultural research methods. In I. Altman, A. Rapoport, & J. F. Wohwill (Eds.), *Environment and Culture* (pp. 47-82). New York: Plenum Press.
- Byrne, B. M. (1993). The Maslach Burnout Inventory: Testing for factorial validity and invariance across elementary, intermediate and secondary teachers. *Journal of Occupational and Organizational Psychology*, 66(3), 197-212.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (second edition). New York: Routledge.

- Camps, J., & Luna-Arocas, R. (2009). High involvement work practices and firm performance. *The International Journal of Human Resource Management*, 20(5), 1056-1077.
- Cappelli, P. & Singh, H. (1992). Integrating strategic human resources and strategic management. In D. Lewin, O.S. Mitchell, & P. D. Sherer (Eds.), *Research frontiers in industrial relations* (pp), Madison, WI: IRRA.
- Cattell, R. B. (1950). *Personality: A systematic theoretical and factual study*. New York: McGraw-Hill.
- Chadwick, C., & Cappelli, P. (1999). Alternatives to generic strategy typologies in strategic human resource management. In P. Wright, L. Dyer, J. Boudreau, & G. Milkovich (Eds.), *Research in personnel and human resources management* (pp. 11-29). Stamford, CT: JAI Press.
- Chen, S. J., Lawler, J. J., & Bae, J. (2005). Convergence in human resource systems: A comparison of locally owned and MNC subsidiaries in Taiwan. *Human Resource Management*, 44(3), 237-256.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233-255.
- Chuang, C. H., & Liao, H. U. I. (2010). Strategic human resource management in service context: Taking care of business by taking care of employees and customers. *Personnel Psychology*, 63(1), 153-196.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Colakoglu, S., Hong, Y., & Lepak, D. P. (2010). Models of strategic human resource management. In A. Wilkinson, N. A. Bacon, T. Redman, & S. Snell (Eds.), *The Sage Handbook of Human Resource Management* (pp. 31-50). London: Sage
- Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59(3), 501-528.
- Davidson, A. R., Jaccard, J. J., Triandis, H. C., Morales, M. L., & Diaz-Guerrero, R. (1976). Cross-cultural model testing: Toward a solution of the etic-emic dilemma. *International Journal of Psychology*, 11(1), 1-13.
- Delery, J. E. (1998). Issues of fit in strategic human resource management: Implications for research. *Human Resource Management Review*, 8(3), 289-309.

- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39(4), 802-835.
- Delery, J. E., & Shaw, J. D. (2001). The strategic management of people in work organizations: Review, synthesis, and extension. In G.R. Ferris (Ed.), *Research in personnel and human resources management* (Vol. 20, pp. 165-197). Stamford, CT: JAI Press.
- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12), 1504-1511.
- DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147-160.
- Donate, M. J., Peña, I., & Sánchez de Pablo, J. D. (2016). HRM practices for human and social capital development: effects on innovation capabilities. *The International Journal of Human Resource Management*, 27(9), 928-953.
- Dowling, B., & Richardson, R. (1997). Evaluating performance-related pay for managers in the National Health Service. *International Journal of Human Resource Management*, 8(3), 348-366.
- Drazin, R., & Van de Ven, A. H. (1985). Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 30(4), 514-539.
- Dyer, L., & Reeves, T. (1995). Human resource strategies and firm performance: what do we know and where do we need to go? *International Journal of Human Resource Management*, 6(3), 656-670.
- Earley, P. C. (1993). East meets West meets Mideast: Further explorations of collectivistic and individualistic work groups. *Academy of Management Journal*, 36(2), 319-348.
- Erez, M. (1994). Towards a model of cross-cultural industrial and organizational psychology. In H.C. Triandis, M.D. Dunnette, & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 4, pp.569-607), Palo Alto, CA: Consulting Psychologists Press.
- Erez, M. (2010). Culture and job design. *Journal of Organizational Behavior*, 31(2-3), 389-400.
- Evans, W. R., & Davis, W. D. (2005). High-performance work systems and organizational performance: The mediating role of internal social structure. *Journal of Management*, 31(5), 758-775.

- Ferris, G. R., Hochwarter, W. A., Buckley, M. R., Harrell-Cook, G., & Frink, D. D. (1999). Human resources management: Some new directions. *Journal of Management*, 25(3), 385-415.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gagné, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., Van den Broeck, A., Aspley, A.K., Bellerose, J., Benabou, C., Chemolli, E., Güntert, S.T. and Halvari, H. (2015). The multidimensional work motivation scale: Validation evidence in seven languages and nine countries. *European Journal of Work and Organizational Psychology*, 24(2), 178-196.
- García, M. F., Posthuma, R. A., Mumford, T., & Quiñones, M. (2009). The five dimensions of pay satisfaction in a maquiladora plant in Mexico. *Applied Psychology*, 58(4), 509-519.
- Gelfand, M.J., Bhawuk, D.P.S., Nishii, L.H. and Bechtold, D.j. (2004) 'Individualism and Collectivism', in R.J. House, P.J. Hanges, M. Javidan, P.W. Dorfman, and V. Gupta (eds.) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies* (pp. 437-512), Sage.
- Gerhart, B., & Milkovich, G. T. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal*, 33(4), 663-691.
- Gerhart, B., Wright, P. M., McMahan, G. C., & Snell, S. A. (2000). Measurement error in research on human resources and firm performance: How much error is there and how does it influence effect size estimates? *Personnel Psychology*, 53(4), 803-834.
- Guest, D. E. (1999). Human resource management-the workers' verdict. *Human Resource Management Journal*, 9(3), 5-25.
- Guest, D. E. (2011). Human resource management and performance: still searching for some answers. *Human Resource Management Journal*, 21(1), 3-13.
- Guest, D., Conway, N., & Dewe, P. (2004). Using sequential tree analysis to search for 'bundles' of HR practices. *Human Resource Management Journal*, 14(1), 79-96.
- Gupta, V., Hanges, P. J., & Dorfman, P. (2002). Cultural clusters: Methodology and findings. *Journal of World Business*, 37(1), 11-15.
- Guthrie, J. (2001). The management, measurement and the reporting of intellectual capital. *Journal of Intellectual Capital*, 2(1), 27-41.
- Guthrie, J. P., Spell, C. S., & Nyamori, R. O. (2002). Correlates and consequences of high involvement work practices: the role of competitive strategy. *International Journal of Human Resource Management*, 13(1), 183-197.

- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). Upper Saddle River, NJ: Pearson Prentice Hall.
- Harman, H. H. (1967). *Modern Factor Analysis*. Chicago, IL: The University of Chicago Press.
- Harrington, D. (2008). *Confirmatory factor analysis*. New York: Oxford University Press.
- Hendricson, W. D., Russell, I. J., Prihoda, T. J., Jacobson, J. M., Rogan, A., & Bishop, G. D. (1989). An approach to developing a valid Spanish language translation of a health-status questionnaire. *Medical Care*, 959-966.
- Heugens, P. P., & Lander, M. W. (2009). Structure! Agency!(and other quarrels): A meta-analysis of institutional theories of organization. *Academy of Management Journal*, 52(1), 61-85.
- Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967-988.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104-121.
- Hofstede, G. (1980). Motivation, leadership, and organization: do American theories apply abroad? *Organizational Dynamics*, 9(1), 42-63.
- Hofstede, G. (1993). Cultural constraints in management theories. *The Academy of Management Executive*, 7(1), 81-94.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.
- Hofstede, G., & Minkov, M. (2010). Long-versus short-term orientation: new perspectives. *Asia Pacific Business Review*, 16(4), 493-504.
- Hoque, K. (1999). New approaches to HRM in the UK hotel industry. *Human Resource Management Journal*, 9(2), 64-76.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Eds.). (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage.
- Hsu, I. C., Yeh-Yun Lin, C., Lawler, J. J., & Wu, S. H. (2007). Toward a model of organizational human capital development: Preliminary evidence from Taiwan. *Asia Pacific Business Review*, 13(2), 251-275.

- Hu, L. T., & Bentler, P. M. (1995). Evaluating model fit. In R.H. Hoyle (Ed.), *Structural equation modeling: Issues, concepts, and applications* (pp. 76-99). Newbury Park, CA: Sage.
- Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Huang, T. C. (1997). The effect of participative management on organizational performance: the case of Taiwan. *International Journal of Human Resource Management*, 8(5), 677-689.
- Hunt, S. M., & Bhopal, R. (2004). Self report in clinical and epidemiological studies with non-English speakers: the challenge of language and culture. *Journal of Epidemiology and Community Health*, 58(7), 618-622.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635-672.
- Ichniowski, C. (1990). Human resource management systems and the performance of US manufacturing businesses. National Bureau of Economic Research working paper no. 3449.
- Ichniowski, C., Kochan, T. A., Levine, D., Olson, C., & Strauss, G. (1996). What works at work: Overview and assessment. *Industrial Relations: A Journal of Economy and Society*, 35(3), 299-333.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The effects of human resource management practices on productivity: A study of steel finishing lines. *The American Economic Review*, 87(3), 291-313.
- Jackson, S. E., Schuler, R. S., & Jiang, K. (2014). An aspirational framework for strategic human resource management. *The Academy of Management Annals*, 8(1), 1-56.
- Jackson, S. E., Schuler, R. S., & Rivero, J. C. (1989). Organizational characteristics as predictors of personnel practices. *Personnel Psychology*, 42(4), 727-786.
- Javidan, M. and Hauser, M. (2004) The linkage between GLOBE findings and other cross-cultural information. In R.J. House, P.J. Hanges, M. Javidan, P.W. Dorfman, & V. Gupta (Eds.) *Culture, leadership, and organizations: The GLOBE study of 62 societies* (pp. 437-512). Thousand Oaks, CA: Sage.



- Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55(6), 1264-1294.
- Jimenez, F. R., Hadjimarcou, J., Barua, M. E., & Michie, D. A. (2013). A cross-national and cross-generational study of consumer acculturation to advertising appeals. *International Marketing Review*, 30(5), 418-439.
- Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, 35(4), 401-415.
- Kalleberg, A. L., & Moody, J. W. (1994). Human resource management and organizational performance. *American Behavioral Scientist*, 37(7), 948-962.
- Kerlinger, F. N. (1986). *Foundations of behavioral research*. New York: Holt, Rinehart and Winston.
- Kim, U. E., Triandis, H. C., Kâğıtçıbaşı, Ç. E., Choi, S. C. E., & Yoon, G. E. (1994). *Individualism and collectivism: Theory, method, and applications*. Thousand Oaks, CA: Sage.
- Kirkman, B. L., & Shapiro, D. L. (1997). The impact of cultural values on employee resistance to teams: Toward a model of globalized self-managing work team effectiveness. *Academy of Management Review*, 22(3), 730-757.
- Koch, M. J., & McGrath, R. G. (1996). Improving labor productivity: Human resource management policies do matter. *Strategic Management Journal*, 17(5), 335-354.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383-397.
- Lawler, J. J., Chen, S. J., Wu, P. C., Bae, J., & Bai, B. (2011). High-performance work systems in foreign subsidiaries of American multinationals: An institutional model. *Journal of International Business Studies*, 42(2), 202-220.
- Leana, C. R., & Van Buren, H. J. (1999). Organizational social capital and employment practices. *Academy of Management Review*, 24(3), 538-555.
- Lepak, D. P., Liao, H., Chung, Y., & Harden, E. E. (2006). A conceptual review of human resource management systems in strategic human resource management research. *Research in Personnel and Human Resources Management*, 25(1), 217-271.
- Liao, H., Toya, K., Lepak, D. P., & Hong, Y. (2009). Do they see eye to eye? Management and employee perspectives of high-performance work systems and influence processes on service quality. *Journal of Applied Psychology*, 94(2), 371-391.

- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 43-53.
- MacCallum, R. C., Roznowski, M., & Necowitz, L. B. (1992). Model modifications in covariance structure analysis: the problem of capitalization on chance. *Psychological Bulletin*, 111(3), 490-504.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial & Labor Relations Review*, 48(2), 197-221.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224.
- Mathis, R. L., & Jackson, J. (2011). *Human resource management: Essential perspectives*. Mason, OH: South-Western Cengage Learning.
- McMahan, G. C., Virick, M., & Wright, P. M. (1999). Alternative theoretical perspectives for strategic human resource management revisited: Progress, problems, and prospects. In P.M. Wright, L.D. Dyer, J.W. Boudreau, & G. T. Milkovich (Eds.), *Research in personnel and human resource management* (Supplement 4), pp. 99-122. Greenwich, CT: JAI Press.
- McNabb, R., & Whitfield, K. (2007). The impact of varying types of performance-related pay and employee participation on earnings. *The International Journal of Human Resource Management*, 18(6), 1004-1025.
- Miles, R. E., & Snow, C. C. (1984). Designing strategic human resources systems. *Organizational Dynamics*, 13(1), 36-52.
- Morris, M. W., Leung, K., Ames, D., & Lickel, B. (1999). Views from inside and outside: Integrating emic and etic insights about culture and justice judgment. *Academy of Management Review*, 24(4), 781-796.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- Newman, K. L., & Nollen, S. D. (1996). Culture and congruence: The fit between management practices and national culture. *Journal of International Business Studies*, 27(4), 753-779.
- Nunnally, J. (1978). *Psychometric Methods*. New York: McGraw Hill.
- Osterman, P. (1994). How common is workplace transformation and who adopts it? *Industrial & Labor Relations Review*, 47(2), 173-188.

- Patel, P. C., Messersmith, J. G., & Lepak, D. P. (2013). Walking the tightrope: An assessment of the relationship between high-performance work systems and organizational ambidexterity. *Academy of Management Journal*, 56(5), 1420-1442.
- Pike, K.L. (1954). Emic and etic standpoints for the description of behavior. In K.L. Pike (Ed.), *Language in relation to a unified theory of the structure of human behavior*, pp. 8–28. Glendale, IL: Summer Institute of Linguistics.
- Porter, M. E. (1985). *Competitive Strategy: Creating and Sustaining Superior Performance*. New York: Free Press.
- Posthuma, R. A., Campion, M. C., Masimova, M., & Campion, M. A. (2013). A high performance work practices taxonomy integrating the literature and directing future research. *Journal of Management*, 39(5), 1184-1220
- Prahalad, C. K., & Hamel, G. (1994). Strategy as a field of study: Why search for a new paradigm? *Strategic Management Journal*, Summer Special Issue, 15, 5-16.
- Rabl, T., Jayasinghe, M., Gerhart, B., & Kühlmann, T. M. (2014). A meta-analysis of country differences in the high-performance work system–business performance relationship: The roles of national culture and managerial discretion. *Journal of Applied Psychology*, 99(6), 1011.
- Robert, C., Probst, T. M., Martocchio, J. J., Drasgow, F., & Lawler, J. J. (2000). Empowerment and continuous improvement in the United States, Mexico, Poland, and India: predicting fit on the basis of the dimensions of power distance and individualism. *Journal of Applied Psychology*, 85(5), 643.
- Rodríguez, J. M., & Ventura, J. (2003). Human resource management systems and organizational performance: An analysis of the Spanish manufacturing industry. *International Journal of Human Resource Management*, 14(7), 1206-1226.
- Ronen, S., & Shenkar, O. (2013). Mapping world cultures: Cluster formation, sources and implications. *Journal of International Business Studies*, 44(9), 867-897.
- Rumelt, R. P. (1984). Towards a strategic theory of the firm. In R. Lamb (Ed.), *Competitive Strategic Management* (pp. 556-570). Englewood Cliffs, NJ: Prentice Hall.
- Russell, J. S., Terborg, J. R., & Powers, M. L. (1985). Organizational performance and organizational level training and support. *Personnel Psychology*, 38(4), 849-863.
- Schuler, R. S. (1986). Fostering and facilitating entrepreneurship in organizations: Implications for organization structure and human resource management practices. *Human Resource Management*, 25(4), 607-629.

- Schuler, R. S., & Jackson, S. E. (1987). Linking competitive strategies with human resource management practices. *Academy of Management Executive*, 1(3), 207-219.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25(1), 1-65.
- Shaw, J. D., Delery, J. E., Jenkins, G. D., & Gupta, N. (1998). An organization-level analysis of voluntary and involuntary turnover. *Academy of Management Journal*, 41(5), 511-525.
- Singleton, R. A and Straits, B. C. (2010). Approaches to social research. 5th edition. New York: Oxford University Press.
- Snell, S. A., Shadur, M. A., & Wright, P. M. (2001). The era of our ways. In M. A. Hitt, R. E. Freeman, & J. S. Harrison (Eds.), *Handbook of Strategic Management* (pp. 627–629). Oxford: Blackwell Publishing.
- Snell, S. A., Youndt, M. A., & Wright, P. M. (1996). Establishing a framework for research in strategic human resource management: Merging resource theory and organizational learning. In G.R. Ferris (Ed.) *Research in Personnel and Human Resources Management*, 61-90, Greenwich, CT: JAI Press.
- Stavrou, E. T., Charalambous, C., & Spiliotis, S. (2007). Human resource management and performance: A neural network analysis. *European Journal of Operational Research*, 181(1), 453-467.
- Steenkamp, J. B. E., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, 25(1), 78-107.
- Steinmetz, H., Schmidt, P., Tina-Booh, A., Wieczorek, S., & Schwartz, S. H. (2009). Testing measurement invariance using multigroup CFA: Differences between educational groups in human values measurement. *Quality & Quantity*, 43(4), 599-616.
- Sun, L. Y., Aryee, S., & Law, K. S. (2007). High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. *Academy of Management Journal*, 50(3), 558-577.
- Swierczek, F. W., & Ha, T. T. (2003). Entrepreneurial orientation, uncertainty avoidance and firm performance: an analysis of Thai and Vietnamese SMEs. *The International Journal of Entrepreneurship and Innovation*, 4(1), 46-58.
- Terpstra, D. E., & Rozell, E. J. (1993). The relationship of staffing practices to organizational level measures of performance. *Personnel Psychology*, 46(1), 27-48.
- Toh, S. M., Morgeson, F. P., & Campion, M. A. (2008). Human resource configurations: investigating fit with the organizational context. *Journal of Applied Psychology*, 93(4), 864.

- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, 51(4), 407-415.
- Tsui, A. S., Pearce, J. L., Porter, L. W., & Tripoli, A. M. (1997). Alternative approaches to the employee-organization relationship: does investment in employees pay off? *Academy of Management Journal*, 40(5), 1089-1121.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Westbrook, R. A., & Black, W. C. (1985). A motivation-based shopper typology. *Journal of Retailing*, 61(1), 78-103.
- Whitener, E. M. (2001). Do "high commitment" human resource practices affect employee commitment? A cross-level analysis using hierarchical linear modeling. *Journal of Management*, 27(5), 515-535.
- Wilkinson, A., Bacon, N., Redman, T., and Snell, S. (2010), SAGE Handbook of Human Resource Management, London: Sage.
- Wood, S. (1999). Getting the measure of the transformed high-performance organization. *British Journal of Industrial Relations*, 37(3), 391-417.
- Wood, S., & De Menezes, L. (1998). High commitment management in the UK: Evidence from the workplace industrial relations survey, and employers' manpower and skills practices survey. *Human Relations*, 51(4), 485-515.
- Wright, P. M., & Boswell, W. R. (2002). Desegregating HRM: A review and synthesis of micro and macro human resource management research. *Journal of Management*, 28(3), 247-276.
- Wright, P. M., & McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management*, 18(2), 295-320.
- Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management*, 27(6), 701-721.
- Wright, P. M., Gardner, T. M., Moynihan, L. M., & Allen, M. R. (2005). The relationship between HR practices and firm performance: Examining causal order. *Personnel Psychology*, 58(2), 409-446.
- Wright, P. M., & Snell, S. A. (1998). Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of management review*, 23(4), 756-772.
- Youndt, M. A., & Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance. *Journal of Managerial Issues*, 337-360.

## **Vita**

Gabriela Flores earned her Bachelor of Science in Aerospace Engineering from the University of Michigan in 1999 and her Master of Business Administration from Oakland University in 2011. In 2012, she joined the Doctoral Program in International Business at the University of Texas at El Paso (UTEP).

Prior to entering the doctoral program, Gabriela worked at DaimlerChrysler and Calvin Klein Furniture. While at UTEP, she was the recipient of the Women's Auxiliary Fellowship as well as a scholarship from the Dean of the College of Business Administration. While pursuing her degree, Gabriela has worked as an Assistant Instructor for the Department of Marketing and Management, where she has taught several courses in Management, including Organizational Behavior, Employee and Labor Relations, International Management, and Organizational Development.

Gabriela's research is broadly centered on investigating the social context of work. Within this area, her primary goals are directed toward understanding how individuals and organizations respond to social factors like HR practices, diversity, and ethics. Gabriela's research has been presented at international conferences, including the Southwest Academy of Management, the European Business Ethics Network Research Conference, and the International HR Division Conference of the Academy of Management. She currently has a book chapter and an article in the process of publication in peer-reviewed academic outlets.