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Poster

TITLE

A Validated Cross-National Measure of High Performance Work Practices.

SHORTENED TITLE

International High Performance Work Practices

ABSTRACT

This study provides empirical support for a seven-factor multi-item measure of High Performance Work practices using data from multiple managers working for companies in 18 different countries (N = 3,289). Reliability, generalizability, measurement equivalence, and validity were demonstrated. This measure will facilitate future research on HPWPs.

PRESS PARAGRAPH

We bring clarity to the field of High Performance Work Practices by creating a consistent measure that can be used across countries and cultures. We studied 3,289 managers working for companies in 18 different countries. Our results show that there are consistencies in the structure of High Performance Work Practices in different contexts. We go further to explain why these practices are effective in enhancing the performance of organizations in different contexts. This will help managers and researchers to better understand how they can increase the efficiency and effectiveness of their operations and to close gaps between managers and researchers.

WORD COUNT

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SOCIAL MEDIA STATEMENT: High Performance Work Practices used in 18 countries were measured using 3,289 managers.

Research on High Performance Work Practices (HPWPs) and Systems (HPWSs) is limited by a lack of agreement on which practices to study and how they should be measured (Toh, Morgeson, & Campion, 2008; Becker & Gerhart, 1996). Without agreed-upon measures, it becomes difficult to compare to prior research, draw conclusions, and build upon those conclusions to develop new knowledge. Existing measures of HPWPs also lack generalizability. Most measures are based on studies from a single industry (Toh, et al., 2008; e.g. Arthur, 1992; Batt, 2002; Bartel, 2004; MacDuffie, 1995), and from a single country (Stavrou, Charalambous, & Spiliotis, 2007). This impairs researchers from testing the influence of contextual factors, like industry and culture.

Also, more research is needed on mechanisms and intervening variables that explain the links between individual HPWPs and organizational performance (Delery, 1998; Paauwe, 2009). Unfortunately, most studies use a single factor measure of HPWPs and are unable to study different practices individually or in different combinations (Huselid, 1995).

Therefore, the current study has two purposes. First, we use Posthuma, Campion, Masimova, and Campion's (2013) taxonomy of HPWPs to develop a comprehensive multifactor measure of HPWPs. Measurement equivalence is evaluated with samples from 18 countries.

Second, we confirm the validity of the multi-factor measure of HPWPs and enhance our understanding of the mechanisms that link HR systems to organizational performance and how these vary across cultures. Using the behavioral perspective of HR, we propose that implementation of HPWPs is related to the importance of innovation to an organization's success. Using the resource based view (RBV) of the firm, we argue that the use of multiple factors of HPWPs leads to sustained competitive advantage for firms through their influence on

employee competencies (Boselie, Dietz, & Boon, 2005). We do so by examining the relationships between culture, context and HPWP selection and effectiveness.

Phase 1: Developing a High Performance Work Practice Measure

Most studies measure HR practices in different ways (Boselie, Dietz, & Boon, 2005; Becker & Gerhart, 1996; Guest, 2011). Dyer and Reeves' (1995) review of four HR strategy configurations found that practice measures vary greatly. They found that the higher investment configurations were superior across different industries and performance outcomes (Dyer & Reeves, 1995). Yet, the reason for the success of the high investment configurations remains unclear because of measurement variability. To understand what accounts for the success of high investment HR systems, we need consistent measurement of HPWPs.

The HPWP taxonomy published by Posthuma et al. (2013) taps into a broad range of practices and provides a good basis for the development of a generalizable measure. That taxonomy identified all HPWPs found in peer-reviewed academic articles published over 20 years (1992 – 2011). It identified 63 HR practices that grouped into nine categories (Table 1). It is also comprehensive; based on many studies across industries, countries, and cultures; generalizable; and focuses on the use of practices, rather than perceptions or attitudes.

Instrument Development and Validation

We followed Hinkin's (1989) measure generation process: item generation, questionnaire administration, initial item reduction, confirmatory factor analysis on a new sample, convergent/discriminatory validity, and replication.

Item Generation and Initial Data Collection

Questionnaires from 603 HR managers in the U.S. measured all 63 practices in Posthuma et al.'s taxonomy. Participants rated how many of their employees were subject to each practice: 1 = none or very few to 5 = all or nearly all. The 63 items were qualitatively evaluated by management faculty for redundancy, clarity, and generalizability. Items thought to be redundant, vague, or open to misrepresentation were eliminated (e.g., frequent or regular meetings with employees, innovative recruiting practices), as were items viewed as too specific or not easily translated to other cultures (e.g., diversity and equal employment opportunity, labor union collaboration); and items that only HR managers could answer (e.g., measurement of employee turnover, employee retention strategies, equitable pay processes). The resulting list contained 42 items (Table 2).

Initial Item Reduction

Data were split into two subsamples. A calibration sample (n=300), was used to develop the measure. A validation sample (n=303) was used to confirm the stability of the measure.

Exploratory Factor Analysis (EFA) identified underlying factors. Using Kaiser's criterion, there were nine factors with eigenvalues exceeding 1, explaining 64.9% of total variance. No factor accounted for over 50% of the variance. Using Varimax rotation, items with low factor loadings (< .40) or problematic cross-loadings were eliminated (Hair et al., 2006). Factors with fewer than two items were also eliminated. The result was a 28-item, seven-factor solution explaining 70.1% of variance (Table 3).

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) improved the scale. Following Hinkin (1998), we used a separate validation data set (n = 303), for this step. The 28-item, seven-dimension HPWP

measurement model was estimated using AMOS 23 with maximum likelihood estimation. Initial model fit was poor ($\chi^2_{(329)} = 637.57$; NFI = .87; CFI = .93; RMSEA = .056; SRMR = .053). To improve fit, we eliminated the five items that had the lowest factor loadings, and items that accounted for multiple high modification indices. Model fit was greatly improved ($\chi^2_{(231)} = 344.72$; NFI = .91; CFI = .96; RMSEA = .046; SRMR = .046).

Convergent and Discriminant Validity

Convergent validity was confirmed by ensuring that individual items loaded significantly onto their expected factors (Anderson & Gerbing, 1988; Arnold & Reynolds, 2003). Table 4 shows factor loadings all exceed .62 and are significant at the $p < .001$ level, supporting convergent validity. Table 4 also shows correlations among the factors. All correlations are positive, revealing that organizations implementing some types of HPWPs also tended to implement others. Inter-factor correlations between the seven HPWP factors range from .20 to .78.

Although HPWP factors were related, they also exhibited discriminant validity (Westbrook & Black, 1985), indicated by AVE estimates that exceeded squared inter-factor (ϕ) correlations (Fornell & Larcker, 1981; Arnold & Reynolds, 2003). All but one AVE met this requirement. The AVE for Communications (.60) is slightly lower than the Performance Management and Appraisal/Communication ϕ correlation (.61). Therefore, additional discriminant validity testing was performed. Suspect factors (Performance Management and Appraisal, and Communications) were combined and compared with the seven-factor model (Anderson & Gerbing, 1988; Arnold & Reynolds, 2003). The chi-square difference test showed that the alternative six-factor model had significantly worse fit ($\Delta\chi^2_{(6)} = 75.05, p < .001$).

A second-order CFA showed that each of the seven factors were indicators of a higher-order HPWP variable (see Figure 2). Model fit indices showed good fit ($\chi^2_{(223)} = 372.82$; NFI = .90; CFI = .96; RMSEA = .047; SRMR = .052). Each loading from the first-order factors to the second-order HPWP factor were significant. This second-order analysis validates that the seven factors also capture a global HPWP factor.

Cross-Cultural Replication

We assessed generalizability of the multi-factor measure. Institutional theory suggests that organizations seek legitimacy by adopting practices that are consistent with their peers (DiMaggio & Powell, 1983). With increased globalization, organizations will be influenced to adopt practices similar to their international competitors. Further, since increased investment in HPWPs is positively related to performance, employers will feel pressure to adopt recognized HPWPs. Therefore, we expected the seven-factor, 23-item measure of HPWPs to generalize across cultures.

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

Cross-country Sample

We tested the seven-factor model across cultures using an independent sample. The HPWP questionnaire was administered to managers in 18 countries (Argentina, Belgium, Brazil, Chile, China, Colombia, Germany, India, Italy, Mexico, Netherlands, Peru, Poland, Russia, South Africa, Spain, United States, and Vietnam). Questionnaires were translated and administered by research partners (co-authors) in each country. Translation and back-translation enabled discussion and resolution of discrepancies between questionnaire versions (Brislin,

1980). Multiple informants were surveyed from each company to avoid potential bias from relying solely on HR managers (Gerhart, Wright, Mahan, & Snell, 2000; Liao et al., 2009). We received 2,686 usable surveys. Table 5 shows the international samples by country.

Measurement Invariance across Organizations and Country Clusters

CFA results showed the model fit the data well for both small ($\chi^2_{(209)} = 666.34$; NFI = .95; CFI = .96; RMSEA = .050; SRMR = .036) and large ($\chi^2_{(209)} = 843.15$; NFI = .92; CFI = .94; RMSEA = .060; SRMR = .042) companies. The fit of the baseline model, in which all parameters were allowed to vary across the two groups, was good ($\chi^2_{(418)} = 1509.5$; NFI = .94; CFI = .95; RMSEA = .038; SRMR = .036), supporting configural invariance. Next, metric invariance was assessed 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 ($\Delta\text{CFI} = .001$). The third invariance test maintained the equality of factor loadings from the previous test and added intercept equality constraints to measure scalar invariance, which was supported ($\Delta\text{CFI} = .000$). These invariance tests show that the seven-factor HPWP measure is invariant across small and large organizations.

We categorized the 18 countries into clusters. Clusters enabled a balanced study of HPWPs between the extremes of local and global perspectives (Ronen & Shenkar, 2013; Asmussen, 2009). Country clusters were based on prior studies (Gupta, et al, 2002; Ronen & Shenkar, 2013). The 18 countries combined to form seven clusters. However, due to small sample sizes from China and Vietnam, these countries are combined with India to form a single Asian cluster (based on Cattell, 1950).

CFA was conducted on each cluster. 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 (Table 6).

Measurement invariance was tested across the five clusters (Gagne et al., 2015). We tested configural invariance between the Anglo cluster and the other four clusters. Results showed the HPWP model is configurally invariant across all four pairings (Table 7). Next, all four cluster pairings are found to be metrically invariant (Table 8), and scalar invariance is supported for the Anglo/Latin European cluster (with rounding). Thus, Hypothesis 1 was supported.

Phase 2: The Impact of Culture and Organizational Context on HPWP Selection and Effectiveness

Researchers examine the impact of HR practices on performance from two perspectives: universalistic or contingency (Delery & Doty, 1996; McMahan, Virick, & Wright, 1999). Universalistic studies focus on the effects of single HR ‘best practices’ on performance. Contingency studies focus on the fit of HPWPs with the organizational context. The contingency perspective has face validity and is consistent with a systems perspective (Toh et al., 2008), with strategy being the most common contingency examined in the literature (e.g., Chadwick & Cappelli, 1999; Delery, 1998). However, empirical evidence is mixed (Delery & Doty, 1996). The way strategy is defined in these studies is thought to be the reason for the mixed results (Toh et al., 2008). The current study builds on prior research by examining how organizational priorities, rather than strategy typologies, impact HPWPs.

From the behavioral perspective, we propose that implementation of HPWPs is correlated with the importance of innovation to an organization's success. This is expected because of the inherent link between innovation and success and also because implementing HPWPs is a form of innovation. Also, the resource based view (RBV), HPWPs has implications for the level of organizational resources in the firm's employees (Boselie, et al., 2005). Specifically, we hypothesize that certain HPWPs are correlated with human capital and social capital.

Behavioral Psychology Perspective

The behavioral psychology perspective connects firm competitive strategy with HR strategy. Grounded in role theory, it posits that employees' role behaviors lead to successful implementation of organizational strategy (Schuler & Jackson, 1987). Managers choose HPWPs that will enhance employee competencies needed to contribute to implementing the organization's strategy (Jackson et al., 1989; Drazin & Van de Ven, 1985).

An important capability that innovative companies need is the ability to respond to changes in the environment. Organizations that rely on innovation will implement HPWPs that help attract highly skilled employees, including competitive compensation, good recruitment, and selection practices enabling flexibility.

H2: Importance of innovation will be positively correlated to Recruiting and Selection, and Compensation and Benefits.

Innovative organizations also choose HPWPs that increase employee motivation. Job and Work Design practices, like autonomy and decentralized decision making, can increase employee motivation. However, most of the research is based in the U.S. Due to the

collectivistic, high-power distance, culture present in the Asian cluster, we do not expect that Job and Work Design practices will be implemented to increase motivation. Rather, in collectivistic cultures, individual goals are based on responsibilities to the group that can be enhanced through Promotions, Performance Management and Appraisal, and Training and Development (Gelfand, Bhawuk, Nishii, & Bechtold, 2004; Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976).

H3a: Importance of innovation will be positively correlated to Promotions, Performance Management and Appraisal, and Job and Work Design factors in the Anglo cluster.

H3b: Importance of innovation will be positively correlated to Promotions, Performance Management and Appraisal, and Training and Development factors in the Asian cluster.

To increase autonomy and decision-making responsibilities, innovative companies will use practices that encourage the sharing of information in Anglo countries, but not in Asian countries where high power distance results in unequal resources, including information.

H4: Importance of innovation will be positively correlated to Communication factors in the Anglo cluster.

Resource Based View

The RBV (Barney, 1991) considers organizations as networks of resources and capabilities (Wernerfelt, 1984; Rumelt, 1984). When these create value for the firm, and are difficult for competitors to imitate, they have the potential to become a sustained competitive advantage (Barney, 1991; Dierickx & Cool, 1989). Firm resources include: physical capital, human capital, social capital, and organizational capital (Barney, 1991; Snell et al., 2001).

Human capital and social capital are employee-centered and are directly impacted by HPWSs (Youndt & Snell, 2004).

HPWPs and human capital. Human capital consists of the knowledge and skills of employees (Youndt & Snell, 2004; Rodriguez & Ventura, 2003). Compensation and Benefits practices can attract employees with higher human capital. Training and Development increases employee human capital. Job and Work Design practices are more likely to enhance human capital in Anglo cultures where autonomy and decentralized decision making is valued. For instance, decentralized decision making and autonomy encourage employees to work through problems, increasing critical thinking skills and perceptions that the organization trusts them. For decentralized decision making and autonomy to have a positive impact on human capital, employees need access to the information to make good decisions.

Hypothesis 5a: Compensation and Benefits, Job and Work Design, and Communication will be positively correlated to human capital in the Anglo cluster.

Hypothesis 5b: Compensation and Benefits, Training and Development, and Communication will be positively correlated to human capital in the Asian cluster.

HPWPs and social capital. Social capital refers to tacit exchanges that enable sharing and integration of knowledge within an organization and with outside partners (Youndt & Snell, 2004). HPWPs can encourage employees to develop relationships and use those relationships to benefit the organization by using promotions as a reward for higher social capital (Snell et al., 2001; Nahapiet & Ghoshal, 1998). Also, long-term relationships and effective communication are important elements of social capital. This will encourage consistent communication and elevate

trust, increasing employee willingness to interact, cooperate, and share information (Leanna & VanBuren, 1999).

Hypothesis 6: Promotions and Communication will be positively correlated to social capital.

Methods

We collected additional data from five countries: U.S., India, China, South Africa, and Vietnam. These five countries combined to form Anglo and Asian clusters representing cultural variation on individualism-collectivism and power distance. Data were obtained seven months after the Phase 1 survey.

Strategy was assessed using two scales, with four items, rating the importance of innovation ($\alpha = .92$) and low costs ($\alpha = .84$) to organization success. Human capital (four items, $\alpha = .81$) and social capital (five items, $\alpha = .88$) were assessed (Youndt & Snell, 2004). Items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Results

Impact of Innovation on HPWPs

Correlations testing the seven HPWP factors are shown in Table 9. Hypothesis 2 is partially supported. For both Anglo and Asian clusters, the importance of innovation was positively correlated with Compensation and Benefits. Positive correlations were found between innovation and Promotions, Performance Management and Appraisal, and Job and Work Design for the Anglo cluster and for Promotions, Performance Management and Appraisal, and Training

and Development for the Asian cluster. Hypothesis 3 was supported. For the Anglo cluster, the correlation between innovation and Communication was not significant, so Hypothesis 4 was not supported.

Effect of HPWPs on Human and Social Capital

Hypothesis 5a was partially supported. Job and Work Design and Communications were both positively correlated with human capital in the Anglo cluster. However, no correlation was found between Compensation and Benefits and human capital. In the Asian cluster, Compensation and Benefits and Training and Development were positively correlated with human capital, but not Communications, partially supporting Hypothesis 5b.

In the Asian cluster, Training and Development, Recruiting and Selection, Compensation and Benefits, and Performance Management and Appraisal were positively related to social capital supporting hypothesis 3b. Further, Promotions and Communication were significantly correlated with social capital in both Anglo and Asian clusters, supporting Hypothesis 6.

Conclusion

This study provided empirical support for a comprehensive measure of HPWPs based on the Posthuma et al. (2013) taxonomy. EFA and CFA on data from large and small employers in U.S. produced a refined seven-factor, 23-item measure of HPWPs. Reliability and validity were demonstrated. This measure had acceptable measurement equivalence across five cultures. This generalizable measure of HPWPs will enable future research on contextual factors such as industry and country cultures. This seven-factor structure was also examined within a nomological network by developing and testing predictions based on the behavioral psychology of HR and RBV. Results indicate significant differences across the Anglo and Asian cultures,

further supporting the validity of the multi-factor measure as well as the impact of culture on HPWPs. These results support the importance of introducing a generalizable measure of HPWPs to international HR researchers.

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Table 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

Table 2: 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

Table 3: 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	.875	.142	.177	.188	.147	.086
TD3	Training for job or organization-specific skills	.795	.170	.232	.164	.131	.077
TD1	Extensive training	.731	.092	.235	.253	.141	.051
TD4	Training for career development	.595	.183	.215	.354	.132	.126
TD5	Cross-functional or multi-skill training	.498	.300	.165	.277	.224	.107
JWD1	Decentralized participative decision making	.089	.697	.069	.127	.085	.083
JWD7	Job enlargement and enrichment	.195	.649	.094	.222	.157	.167
JWD5	Self-managed work teams, quality teams, etc.	.072	.641	.058	.012	.086	-.003
JWD6	Employee discretion and autonomy	.089	.630	.128	.063	.101	.143
JWD2	Project or other temporary work teams	.082	.617	.075	.083	.044	.105
JWD4	Job rotation or cross functional employee utilization	.114	.568	.107	.243	.008	.061
RS5	Planning for selection and staffing procedures	.217	.118	.746	.261	.138	.065
RS4	Employment tests or structured job interviews	.165	.115	.690	.187	.079	.001
RS3	Multiple selection methods to screen job applicants	.173	.191	.688	.053	.213	.081
RS2	Specific and explicit criteria used to hire new employees	.240	.096	.610	.088	.155	.104
Promo5	Defined career paths and job ladders	.245	.215	.154	.693	.069	.141
Promo3	Career planning	.247	.143	.202	.691	.239	.155
Promo4	Many opportunities to get promoted	.281	.228	.233	.661	.117	.102
Promo1	Employees are promoted from within the organization	.238	.163	.092	.470	.154	.054
PMA1	Appraisals based on objective results or behaviors	.154	.053	.257	.206	.201	.152
PMA2	Appraisals used for development or potential	.210	.122	.244	.244	.243	.162
PMA3	Frequent performance appraisal meetings	.271	.222	.189	.264	.237	.147
Com3	Employee input and suggestion processes	.271	.210	.220	.182	.138	.063
Com1	Formal information sharing program	.198	.257	.171	.209	.213	.123
Com2	Employees receive info about org perf and strategy	.156	.147	.291	.159	.253	.138
CB1	Pay for performance	.134	.115	.024	.084	.088	.798
CB4	Incentive compensation	.058	.240	.080	.121	.106	.650
CB2	Formal performance appraisal for pay increases	.054	.082	.101	.121	.021	.509

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

Table 4: CFA Item Loadings and Inter-Factor Correlations for 23-Item Model

Dimension	Factor Loading*
<u>Training & Development (Mean = 9.90, SD = 3.15, $\alpha = .88$)</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 & Work Design (Mean = 11.95, SD = 3.47; $\alpha = .75$)</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; $\alpha = .86$)</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 & Selection (Mean = 14.12, SD = 4.15; $\alpha = .81$)</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 & Benefits (Mean = 9.83, SD = 3.78; $\alpha = .74$)</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; $\alpha = .82$)</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 & Appraisal (Mean = 10.13, SD = 3.35; $\alpha = .83$)</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	<i>.88</i>						
(2) Job & Work Design	.58	<i>.75</i>					
(3) Promotion	.61	.61	<i>.86</i>				
(4) Recruitment & Selection	.53	.45	.54	<i>.81</i>			
(5) Compensation & Benefits	.31	.48	.45	.20	<i>.74</i>		
(6) Communication	.61	.64	.72	.63	.45	<i>.82</i>	
(7) Performance Management & Appraisal	.64	.55	.72	.62	.42	.78	<i>.83</i>

Alpha coefficients are shown in italics on the diagonal.

Table 5: Countries and Sample Sizes used for Calibration, Validation, Replication and

Invariance Testing

Country	n
Argentina	110
Belgium	310
Brazil	53
Chile	73
China	120
Colombia	153
Germany	110
India	204
Italy	190
Mexico	176
Netherlands	194
Peru	92
Poland	216
Russia	259
South Africa	140
Spain	262
US*	603
Vietnam	24
Study Total	3,289

*US calibration sample = 300

*US validation sample = 303

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

Cluster	χ^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, Netherlands)	934.35	209	0.93	0.94	0.07	0.05
(5) Asian (China, Vietnam, India)	519.56	209	0.86	0.91	0.07	0.05

Table 7: Fit Statistics for Four Culture Pairings Separately

Cluster Pairing	χ^2	df	NFI	CFI	RMSEA	SRMR
Anglo and Latin American	1039	418	0.90	0.94	0.05	0.06
Anglo and Latin European	1078.94	418	0.91	0.94	0.04	0.06
Anglo and Eastern European	1349.06	418	0.92	0.94	0.05	0.06
Anglo and Asian	933.14	418	0.86	0.91	0.05	0.06

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

Cluster Pairing	Baseline Model		Measurement Invariance Model			Scalar Invariance Model		
	χ^2	df	$\Delta\chi^2$	Δdf	p	$\Delta\chi^2$	Δdf	p
Anglo and Latin American	1039	418	38.51	16	0.001	138.10	44	0.000
Anglo to Latin European	1078.94	418	12.52	16	0.707	82.59	44	0.000
Anglo to Eastern European	1349.06	418	25.44	16	0.062	147.18	44	0.000
Anglo to Asian	933.14	418	25.36	16	0.064	204.44	44	0.000

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

Table 8b: Fit Statistics for Invariance Tests Using CFI Difference Criteria

Cluster Pairing	CFI configural invariance	CFI metric invariance	ΔCFI	CFI structural invariance	ΔCFI
Anglo and Latin American	0.94	0.93	0.01	0.93	0.01
Anglo to Latin European	0.94	0.94	0.00	0.94	0.00
Anglo to Eastern European	0.94	0.94	0.00	0.93	0.01
Anglo to Asian	0.91	0.91	0.00	0.89	0.02

Invariance supported when ΔCFI does not exceed .01 when compared to baseline/configural model (Chueng & Rensold, 2002)

Table 9: Correlation between HPWPs, Antecedents, and Outcomes

Variables	Culture	N	TD	JWD	Promo	RS	CB	Com	PMA
Importance of Innovation	Anglo	216	-.02	.15*	.14*	.08	.14*	.13	.14*
	Asian	334	.23**	-.04	.22**	.07	.22**	.02	.23**
Importance of Low Cost	Anglo	216	.03	.06	.08	-.04	.04	.05	.03
	Asian	334	.06	-.08	.13*	-.08	.17**	-.02	.19**
Human Capital	Anglo	225	.01	.20**	.13	.10	.08	.20**	.08
	Asian	334	.21**	-.02	.03	.07	.14**	.10	.04
Social Capital	Anglo	226	.09	.05	.13*	.01	.09	.16*	.09
	Asian	334	.16**	.04	.11*	.16**	.19**	.12*	.12*

*p < .05, ** p < .01. TD = Training and Development, JWD = Job and Work Design, Promo = Promotions, RS = Recruiting and Selection, CB = Compensation and Benefits, Com = Communications, PMA = Performance Management and Assessment.