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## **Toward a More PERMA(nent) Conceptualization of Worker Well-Being?**

### **A Cross-Cultural Study of the Workplace PERMA Profiler**

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### Abstract

We examined the factor structure of the recently developed worker well-being measure the Workplace PERMA Profiler and relationships between PERMA dimensions (i.e., *positive emotions, engagement, positive relationships, meaning, accomplishment*) and job performance (viz., task performance, organizational citizenship behaviors benefiting individuals and the organization at large). The measure exhibited metric (i.e., weak) invariance across samples of participants from the U.S. ( $N = 284$ ) and China ( $N = 420$ ). Additionally, for participants who responded to both the Workplace PERMA Profiler and the performance measures, there was a general pattern of positive PERMA–performance relationships across both samples ( $N_{\text{U.S.}} = 147$ ;  $N_{\text{China}} = 202$ ). Overall, the Workplace PERMA Profiler may have problematic psychometric properties and item wordings and thus would benefit from further refinement.

*Keywords:* PERMA, well-being, task performance, organizational citizenship behavior

## **Toward a More PERMA(nent) Conceptualization of Worker Well-Being?**

### **A Cross-Cultural Study of the Workplace PERMA Profiler**

Happy workers perform better than unhappy workers (Wright & Cropanzano, 2000). But well-being is a complex multidimensional construct that cannot be reduced simply to happiness (Ryff & Singer, 2006; Seligman, 2011), and there exist cross-cultural differences in how well-being is conceptualized (e.g., McMahan et al., 2014; Oishi, 2010). In the present study, we investigated Seligman's (2011) PERMA framework of well-being with workers from two countries. Specifically, we examined the factor structure, measurement equivalence, and criterion-related validity of the Workplace PERMA Profiler (Kern, 2014) with participants from the U.S. and China. To our knowledge, we are the first to subject the measure to formal cross-cultural measurement invariance testing (cf. Choi et al., 2019; Watanabe et al., 2018). Ultimately, we sought to investigate whether the Workplace PERMA Profiler is a relevant well-being measure for both U.S. and Chinese workers.

Well-being involves not only hedonia (i.e., pleasure and happiness), but also eudaimonia (i.e., self-realization, authenticity, and meaningfulness); nevertheless, organizational researchers historically have focused on hedonic well-being (Sonnentag, 2015). In the present study, we incorporated Seligman's (2011) integrative PERMA framework, which captures five well-being dimensions pursued as ends in themselves: *positive emotions*, *engagement*, *positive relationships*, *meaning*, and *accomplishment*. Positive emotions are transient pleasurable affective experiences that generally facilitate approach behavior and the generation of personal resources (Fredrickson, 2001). Engagement entails absorption, interest, and involvement in an activity (Kern, 2014)—a well-being component that Seligman (2011) equated with flow. Philosophers and psychologists alike have long acknowledged positive relationships with others

as a component of well-being; such bonds are fundamental to survival (Ryff & Singer, 2006; Seligman, 2011). Meaning involves leading a purposeful life and perceiving oneself as part of and/or contributing to something larger than the self (e.g., an organization; Seligman, 2011). Accomplishment entails perceived mastery of daily responsibilities and goal achievement (Kern, 2014). PERMA research is in its infancy (Seligman, 2018), and researchers are just beginning to develop measures of work-related PERMA (e.g., Kern, 2014; Kun et al., 2017).

Moreover, researchers have applied the PERMA framework outside of the U.S.; some have interpreted between-country mean differences in PERMA dimensions (e.g., Iasiello et al., 2017). But empirical evidence formally demonstrating, through measurement invariance testing, work-related PERMA measures' generalizability across different cultures is lacking. Establishing measurement invariance is a prerequisite for conducting cross-cultural comparisons. The present study is a major contribution to the nascent organizational PERMA literature as we are the first researchers to cross-culturally evaluate the measurement invariance of the Workplace PERMA Profiler. Notwithstanding U.S.–China differences in individualism/collectivism, power distance, and short-term/long-term orientation (Hofstede, 2007), there is research suggesting that well-being manifests and functions similarly across cultures (Helliwell & Barrington-Leigh, 2010). Additionally, other researchers found that a non-PERMA conceptualization of employee well-being held across samples of participants from the U.S. and China (Zheng et al., 2015). Considering the above research, we expect the same basic PERMA factor structure across the two samples and ask the following research question:

*Research Question 1: Do the Workplace PERMA Profiler's five PERMA dimensions exhibit measurement invariance across samples from the U.S. and China?*

To further evaluate the measure and assess its predictive validity in both cultures, we examined the relationships between the PERMA dimensions and different job performance behaviors (viz., task performance, organizational citizenship behaviors benefiting individuals—OCB-I—and the organization at large—OCB-O).

*Research Question 2: Do the Workplace PERMA Profiler's five PERMA dimensions exhibit predictive validity?*

## Method

### Participants and Procedure

Data from the U.S. were collected from Amazon Mechanical Turk. Data from China were collected from the Wen Juan Xing platform (<https://wjx.cn>). Participants responded to two online surveys administered approximately one month apart. In Survey 1, participants responded to demographic items and PERMA items. In Survey 2, participants self-reported job performance in their primary job over the month following Survey 1 completion. All measures are presented in Table 1. We excluded participants who had a “long string” of the same response for all items and whose response times suggested they spent less than two seconds responding to each item (see Huang et al., 2012; Meade & Craig, 2012) on either survey. After excluding (per the aforementioned data-screening procedure) 21 participants, we conducted measurement invariance testing with samples comprising 284 U.S. participants (37% female,  $M_{\text{Age}} = 35.81$  years,  $SD_{\text{Age}} = 10.70$  years,  $M_{\text{Organizational tenure}} = 6.41$  years,  $SD_{\text{Organizational tenure}} = 8.14$  years) and 420 participants from China (57% female,  $M_{\text{Age}} = 32.01$  years,  $SD_{\text{Age}} = 6.54$  years,  $M_{\text{Organizational tenure}} = 6.95$  years,  $SD_{\text{Organizational tenure}} = 5.38$  years). Capping Survey 2 participation given budget considerations resulted in an approximately 50% reduction to both samples. After excluding participants for whom we were unable to match responses across the two surveys and one U.S.

participant whose responses suggested they spent less than two seconds responding to each item on Survey 2, we examined PERMA–performance relationships with samples comprising 147 U.S. participants (34% female,  $M_{\text{Age}} = 34.99$  years,  $SD_{\text{Age}} = 10.47$  years,  $M_{\text{Organizational tenure}} = 5.78$  years,  $SD_{\text{Organizational tenure}} = 10.31$  years) and 202 participants from China (60% female,  $M_{\text{Age}} = 32.51$  years,  $SD_{\text{Age}} = 6.79$  years,  $M_{\text{Organizational tenure}} = 7.13$  years,  $SD_{\text{Organizational tenure}} = 5.45$  years).

## Results

Intercorrelations and descriptive statistics are presented in Table 2. Using the *lavaan* R package (Rosseel, 2012), we evaluated the factor structure and measurement invariance of the PERMA scales with participants who filled out Survey 1 and for whom responses were not flagged during the aforementioned data-screening procedure ( $N_{\text{U.S.}} = 284$ ;  $N_{\text{China}} = 420$ ). We evaluated our models vis-à-vis the following rules of thumb for acceptable model fit: CFI  $\geq .95$ , SRMR  $\leq .08$  (Hu & Bentler, 1999), and RMSEA  $\leq .08$  (Vandenberg & Lance, 2000). See Table 3 for robust model-fit indices and model comparisons (“MLM” estimator specified in *lavaan*). First, we fitted a single-factor model for all 15 PERMA indicators. Although this model exhibited acceptable fit in the China sample, it exhibited poor fit with the U.S. sample—with a robust RMSEA of .17 and robust CFI of .80 suggesting particularly poor fit. Next, we specified a five-factor model with each PERMA item loading onto its purported respective factor and factors free to covary. Model fit significantly improved for both samples, but a robust RMSEA of .11 suggested inadequate fit for the U.S. sample. Modification indices (MIs) indicated that Item M3 (see Appendix) was problematic; it cross-loaded onto other PERMA dimensions. After removing this item based on MIs and problematic wording (see Discussion section), model fit was generally acceptable; however, robust RMSEA was .10 for the U.S. sample. Although model RMSEA was  $> .08$  (some researchers, however, consider  $.08 \leq \text{RMSEA} \leq .10$  “mediocre fit”;

MacCallum et al., 1996, p. 134), the CFI of .95 is satisfactory. Automatically dismissing a model based on conflicting CFI and RMSEA—especially one with satisfactory CFI and less satisfactory RMSEA—is inadvisable (see Lai & Green, 2016).

We subsequently evaluated measurement invariance with the five-factor model without Item M3. When we evaluated configural invariance, model fit was acceptable—suggesting equivalent factor structure across groups (see Tables 4 and 5 for factor loadings and intercorrelations, respectively). When we evaluated metric invariance, model fit did not significantly worsen—suggesting equivalent factor loadings across groups. When we evaluated scalar invariance, model fit significantly worsened (accompanied by  $\Delta$ Robust CFI = -.03—see Vandenberg & Lance, 2000— $\Delta$ Robust RMSEA = .02, and  $\Delta$ SRMR = .01). Additionally, the MIs did not suggest that freeing the equality constraints on any intercept would result in partial scalar invariance. Thus, group intercepts were not equivalent. Taken together, the five-factor PERMA model without Item M3 exhibited weak invariance. Also, most observed correlations between the five PERMA dimensions and three performance variables (with the exception of the correlation between positive emotions and task performance and the one between positive emotions and OCB-O in the U.S. sample) were significant and positive—largely supporting the predictive validity of the PERMA dimensions across the two cultures (see Table 2).

### **Discussion**

Our findings suggest that the Workplace PERMA Profiler exhibits weak measurement invariance. In other words, we found that factor structure and loadings were equivalent across the two samples but intercepts were not—indicating that the PERMA scales are calibrated differently for each sample. Because scale means across the two samples are consequently

incomparable, scale mean differences should not be interpreted. Thus, researchers and practitioners would benefit from an improved work-related PERMA measure.

Another major contribution of the present study is important information about the validity and limitations of the Workplace PERMA Profiler. Many of the latent intercorrelations between PERMA dimensions were remarkably strong (e.g., U.S.  $r_{E-M} = .95$ ; see Table 5). Moreover, the pattern of PERMA–performance relationships suggests questionable discriminant validity (see Table 2). Our confirmatory factor analyses also revealed a problematic meaning item. The MIs for Item M3 indicated that model fit would substantially improve if the item was allowed to cross-load onto other PERMA factors. Perhaps participants were interpreting the question as asking whether they know what they need to do to fulfill their work-related goals or whether they are given sufficient direction—rather than whether their work is meaningful. We recommend researchers revise work-related PERMA meaning items in order to better capture “belonging to and serving something [one believes] is bigger than the self” (Seligman, 2011, p. 17).

Additionally, although the PERMA items were developed to measure individuals’ well-being, some accomplishment items do not seem to clearly capture individuals’ subjective feelings of accomplishment. For example, subjective feelings of accomplishment are not salient in Item A3—making this item similar to a task performance item; in contrast, Item A1 explicitly measures such feelings of accomplishment (see Appendix).<sup>1</sup> Given this issue, the present study’s observed correlations between accomplishment and task performance may be overestimations of the relationship between the two variables. We recommend future refinement of the accomplishment items to more explicitly assess one’s subjective feelings of accomplishment.

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<sup>1</sup> We thank an anonymous reviewer for pointing out Item A3’s problematic wording.

Future revisions to the aforementioned PERMA scales might also address the unsatisfactory reliability we found in the China sample (see Table 1).

### **Conclusion**

The present study's findings suggest that the Workplace PERMA Profiler does not fit the conceptual PERMA framework. Problematic item wordings and psychometric properties indicate that the measure should be further refined and improved. Consequently, more investigation of the PERMA framework's applicability to occupational settings is needed. Future research on work-related PERMA should include formal measurement equivalence testing across not only cultures, but also other demographic categories, such as gender and occupations.

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**Table 1***Measures, Sample Items, and Reliability Estimates*

Measures	Source and number of items	Sample item	Cronbach's $\alpha$ (U.S./China)	$\Omega$ total (U.S./China)
Positive emotions	Kern's (2014) Workplace PERMA Profiler (three items)	"At work, how often do you feel joyful?"	.86/.86	.86/.86
Engagement	Kern's (2014) Workplace PERMA Profiler (three items)	"At work, how often do you become absorbed in what you are doing?"	.77/.59	.79/.59
Positive relationships	Kern's (2014) Workplace PERMA Profiler (three items)	"To what extent do you receive help and support from coworkers when you need it?"	.89/.63	.90/.65
Meaning <sup>a</sup>	Kern's (2014) Workplace PERMA Profiler (two items)	"To what extent is your work purposeful and meaningful?"	—	—
Accomplishment	Kern's (2014) Workplace PERMA Profiler (three items)	"How often do you feel you are making progress towards accomplishing your work-related goals?"	.85/.55	.86/.57

(continued)

(continued)

Measures	Source and number of items	Sample item	Cronbach's $\alpha$ (U.S./China)	$\Omega$ total (U.S./China)
Task performance	Williams and Anderson's (1991) in-role behaviors scale (seven items)	"Adequately completed assigned duties."	.86/.71	.87/.73
OCB-I	Williams and Anderson's (1991) OCB scale (seven items)	"Helped others who have been absent."	.89/.72	.89/.73
OCB-O	Williams and Anderson's (1991) OCB scale (six items)	"Adhered to informal rules devised to maintain order."	.71/.49	.74/.52

*Note.* For the China sample, each measure was translated from English to Chinese using Brislin's (1970) back-translation procedures.

Although the full Workplace PERMA Profiler (Kern, 2014) contains scales for health and negative emotions as well as single items measuring happiness and loneliness, the current study focused only on the PERMA items. Each scale had response options ranging from 1 to 7. Participants were asked about their job performance in their primary job during the past month. OCB-I = organizational citizenship behavior benefiting other individuals in the organization; OCB-O = organizational citizenship behavior benefiting the organization at large. Reliability estimates are based on data from participants who responded to both surveys ( $N_{U.S.} = 147$ ;  $N_{China} = 202$ ).  $\Omega$  total was computed using the *MBESS* R package (Kelley, 2007).

<sup>a</sup> Reliability estimates are not given for the meaning scale because removal of Item M3 (see Appendix) resulted in a scale with only two items. The zero-order correlation for the relationship between the two meaning items was  $r = .87$  for the U.S. sample and  $r = .59$  for the China sample.

**Table 2***Descriptive Statistics and Bivariate Correlations of Study Variables*

Variable	$M_{U.S.}$	$SD_{U.S.}$	$M_{China}$	$SD_{China}$	1	2	3	4	5	6	7	8	9	10	11
1. Age	34.99	10.47	32.51	6.79		-.18	.75***	.06	.01	-.05	.08	.06	.23***	-.06	.10
2. Sex	1.34	0.48	1.60	0.49	.14		-.22**	-.04	-.08	-.10	-.07	-.12	-.10	-.05	-.05
3. Tenure	5.78	10.31	7.13	5.45	.33***	.03		.18**	.11	.07	.15	.12	.28***	.05	.17*
4. P	4.85	1.37	5.02	1.10	.05	.05	.00		.62***	.55***	.53***	.47***	.35***	.47***	.21**
5. E	4.79	1.34	5.22	0.94	.05	.08	.09	.77***		.55***	.51***	.43***	.39***	.41***	.30***
6. R	5.37	1.31	5.18	0.88	.25**	.00	.12	.63***	.41***		.42***	.50***	.40***	.51***	.19**
7. M	4.95	1.69	5.45	0.93	.18*	.01	.08	.79***	.82***	.46***		.44***	.39***	.36***	.25***
8. A	5.55	1.09	5.60	0.76	.16	.02	.07	.73***	.64***	.56***	.66***		.52***	.41***	.25***
9. TP	6.04	0.89	5.77	0.64	.21*	-.04	.12	.16	.16*	.34***	.20*	.37***		.32***	.51***
10. OCB-I	5.13	1.13	4.93	0.83	.11	.09	.12	.44***	.53***	.51***	.52***	.42***	.37***		.18**
11. OCB-O	5.52	1.03	5.48	0.70	.26**	.04	.17*	.15	.17*	.27**	.26**	.24**	.67***	.37***	

*Note.*  $N_{U.S.} = 147$ ;  $N_{China} = 202$ . Correlations below the diagonal are for the U.S. sample, and correlations above the diagonal are for the China sample. Tenure refers to number of years respondent has been at their organization.  $M_{U.S.}$  = mean of U.S. sample;  $SD_{U.S.}$  = standard deviation of U.S. sample mean;  $M_{China}$  = mean of the China sample;  $SD_{China}$  = standard deviation of the mean of the China sample; Sex: 1 = male, 2 = female; P = positive emotions; E = engagement; R = positive relationships; M = meaning; A = accomplishment; TP = task performance; OCB-I = organizational citizenship behavior benefiting other individuals in the organization; OCB-O = organizational citizenship behavior benefiting the organization at large.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 3***Measurement Invariance Testing Results and Final Measurement Models*

Model	S-B $\chi^2$ (df)	$\bar{T}_d$ ( $\Delta df$ )	$p$	Robust CFI	Robust RMSEA	SRMR
1. Single-factor measurement model with all PERMA items loading onto one factor (U.S.)	538.95 (90)		< .001	.80	.17	.08
2. Single-factor measurement model with all PERMA items loading onto one factor (China)	210.76 (90)		< .001	.92	.07	.05
3. Five-factor measurement model with each PERMA item loading onto its purported respective factor (U.S.)	262.40 (80)		< .001	.93	.11	.07
4. Five-factor measurement model with each PERMA item loading onto its purported respective factor (China)	144.16 (80)		< .001	.96	.05	.04
5. Final five-factor measurement model without Item M3 (U.S.) <sup>a</sup>	183.57 (67)		< .001	.95	.10	.05
6. Final five-factor measurement model without Item M3 (China) <sup>a</sup>	123.89 (67)		< .001	.96	.05	.04

(continued)

(continued)

Model	S-B $\chi^2$ (df)	$\bar{T}_d$ ( $\Delta df$ )	<i>p</i>	Robust CFI	Robust RMSEA	SRMR
7. Configural invariance	308.69 (134)		< .001	.95	.07	.04
8. Metric invariance	321.00 (143)		< .001	.95	.07	.05
9. Scalar invariance	452.35 (152)		< .001	.92	.09	.06
Model 1 vs. Model 3		186.10 (10)	< .001			
Model 2 vs. Model 4		68.78 (10)	< .001			
Model 7 vs. Model 8		11.48 (9)	.244			
Model 8 vs. Model 9		876.37 (9)	< .001			

*Note.*  $N_{U.S.} = 284$ ;  $N_{China} = 420$ ; S-B  $\chi^2$  = Satorra–Bentler scaled chi-square (Satorra & Bentler, 1994);  $\bar{T}_d$  = scaled difference chi-square test statistic (Satorra & Bentler, 2001); CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

<sup>a</sup> Item M3 is the problematic meaning item that was excluded from the final measurement models: “To what extent do you generally feel that you have a sense of direction in your work?”

**Table 4**

*Factor Loadings for Configural Invariance Model*

Items	Positive emotions		Engagement		Positive relationships		Meaning		Accomplishment	
	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$
U.S.										
P1	1.00	0.80								
P2	1.01	0.88								
P3	1.04	0.84								
E1			1.00	0.62						
E2			2.07	0.94						
E3			1.29	0.65						
R1					1.00	0.69				
R2					1.43	0.85				
R3					1.55	0.93				
M1							1.00	0.94		
M2							0.95	0.94		
A1									1.00	0.83
A2									1.12	0.93
A3									0.64	0.59

(continued)

(continued)

Items	Positive emotions		Engagement		Positive relationships		Meaning		Accomplishment	
	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$	Unstd	$\lambda$
China										
P1	1.00	0.79								
P2	1.00	0.77								
P3	1.00	0.80								
E1			1.00	0.53						
E2			1.66	0.78						
E3			0.80	0.38						
R1					1.00	0.48				
R2					1.53	0.69				
R3					1.50	0.65				
M1							1.00	0.74		
M2							1.05	0.71		
A1									1.00	0.68
A2									0.86	0.55
A3									0.62	0.43

*Note.*  $N_{U.S.} = 284$ ;  $N_{China} = 420$ ; Unstd = unstandardized factor loading;  $\lambda$  = standardized factor loading; P1–P3 = positive emotions items 1–3; E1–E3 = engagement items 1–3; R1–R3 = positive relationships items 1–3; M1–M2 = meaning items 1–2; A1–A3 = accomplishment items 1–3. See Appendix Table A1 for full wording of PERMA items.

**Table 5***Latent Correlations of PERMA Factors for Configural Invariance Model*

Factor	1	2	3	4	5
1. Positive emotions		.98	.83	.82	.79
2. Engagement	.93		.83	.86	.75
3. Positive relationships	.82	.64		.70	.86
4. Meaning	.88	.95	.62		.82
5. Accomplishment	.85	.79	.69	.73	

*Note.*  $N_{U.S.} = 284$ ;  $N_{China} = 420$ . Correlations below the diagonal are for the U.S. sample, and correlations above the diagonal are for the China sample.

## Appendix

**Table A1**

*PERMA Items from the Workplace PERMA Profiler*

Item	PERMA dimension (Item label)
1. How often do you feel you are making progress towards accomplishing your work-related goals?	Accomplishment (A1)
2. At work, how often do you become absorbed in what you are doing?	Engagement (E1)
3. At work, how often do you feel joyful?	Positive emotions (P1)
4. How often do you achieve the important work goals you have set for yourself?	Accomplishment (A2)
5. To what extent is your work purposeful and meaningful?	Meaning (M1)
6. To what extent do you receive help and support from coworkers when you need it?	Positive relationships (R1)
7. In general, to what extent do you feel that what you do at work is valuable and worthwhile?	Meaning (M2)
8. To what extent do you feel excited and interested in your work?	Engagement (E2)
9. At work, how often do you feel positive?	Positive emotions (P2)
10. How often are you able to handle your work-related responsibilities?	Accomplishment (A3)
11. At work, how often do you lose track of time while doing something you enjoy?	Engagement (E3)
12. To what extent do you feel appreciated by your coworkers?	Positive relationships (R2)
13. To what extent do you generally feel that you have a sense of direction in your work?	Meaning (M3)
14. How satisfied are you with your professional relationships?	Positive relationships (R3)
15. At work, to what extent do you feel contented?	Positive emotions (P3)

*Note.* See Kern (2014) for more information regarding the Workplace PERMA Profiler.