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**The Potential and Peculiarities of PERMA:  
A Meta-Analysis of Two Well-Being Measures With Working Samples**


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### Abstract

In the first meta-analysis of the PERMA well-being framework (i.e., *positive emotions, engagement, positive relationships, meaning, accomplishment*), we cumulated 692 effect sizes ( $k = 33$  independent samples,  $N = 10,050$  workers). Average reliability did not meet the conventional  $\alpha = .70$  threshold for engagement measured with the PERMA-Profiler or the Workplace PERMA Profiler or for negative emotions measured with the former. Overall, PERMA dimensions were strongly intercorrelated, and model comparisons suggested multidimensionality. We also summarized PERMA's relationships with some conceptual antecedents (conscientiousness, loneliness); correlates (happiness, negative emotions); and outcomes (physical health, depressive symptoms, overall job performance). Additionally, we used dominance analysis to examine PERMA dimensions' incremental validity. Although the framework holds promise for organizational research, PERMA measurement must be refined.

*Keywords:* PERMA, job performance, well-being measurement, psychometrics, meta-analysis

## **The Potential and Peculiarities of PERMA:**

### **A Meta-Analysis of Two Well-Being Measures With Working Samples**

A decade ago, Martin Seligman (2011) published the book *Flourish* and introduced a parsimonious framework of well-being comprising *positive emotions, engagement, positive relationships, meaning, and accomplishment* (PERMA). More recently, Garden et al. (2018) discussed how PERMA facilitates a more holistic approach to studying worker well-being beyond narrow conceptualizations (e.g., job satisfaction, work engagement). Furthermore, whereas organizational research is dominated by the hedonic perspective on well-being (Jimenez et al., 2022), PERMA integrates well-being concepts from both hedonic (e.g., positive emotions) and eudaimonic (e.g., meaning) traditions (Goodman et al., 2018).

This study is the first meta-analysis of the nascent PERMA literature. Although it is a popular framework for conceptualizing the well-being of students and teachers (Kern, 2022), PERMA has just begun to gain traction in organizational research. Because workers are individuals with life experiences that extend beyond their jobs, we meta-analyzed both their general and work-specific PERMA. We focused on two popular PERMA measures: Butler and Kern's (2016) PERMA-Profiler and Kern's (2014) Workplace PERMA Profiler.<sup>1</sup> The former captures general well-being in one's personal life, whereas the latter is contextualized to professional experiences. Both contain 23 items: 15 PERMA items (three items/domain) and eight items tapping additional well-being constructs (one happiness item, one loneliness item, three items capturing negative emotions, and three items capturing physical health).<sup>2</sup> Most items are similar across the measures—with three identical physical-health items.

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<sup>1</sup> Kun et al. (2017) recently developed another measure of work-specific PERMA. See Supplemental Materials for meta-analytic intercorrelations, measurement models, and factor loadings for this measure.

<sup>2</sup> Although some researchers combine the 15 PERMA items with the happiness item for an overall well-being score (see Kern, 2014), our analyses involving overall PERMA involve just the PERMA items.

We aimed to meta-analytically address the following research questions:

- (1) What are the intercorrelations and factor structure of the PERMA dimensions?
- (2) How are the PERMA dimensions related to other constructs—namely, conceptual antecedents conscientiousness and loneliness; conceptual correlates happiness and negative emotions; and conceptual outcomes depressive symptoms, physical health, and overall job performance?
- (3) What is the relative importance of each PERMA dimension when predicting outcomes?

## **Method**

### **Literature Search**

We implemented the following inclusion criteria: correlations involving at least one of the two PERMA measures,<sup>3</sup> employed participants, and results reported in English. Literature searches were conducted during spring–fall 2021—mainly using ABI/INFORM, Google Scholar, ProQuest, and PsycINFO. Specifically, we paired “Seligman” and “PERMA” and, in some instances, incorporated additional search terms (e.g., “employees,” “workers,” “correlations”) to facilitate more manageable searches (e.g., Google Scholar). In addition, we conducted forward searches for studies involving the two PERMA measures. We also searched for relevant studies presented at the Academy of Management and Society for Industrial and Organizational Psychology conferences. We sent 48 requests for information and received meta-analyzable data for seven samples. After reviewing approximately 3,300 search results, we compiled a database comprising 692 effect sizes from 33 independent samples ( $N = 10,050$ ; see Supplemental Materials).

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<sup>3</sup> See Supplemental Materials for description of two samples that were ultimately excluded.

### **Coding and Meta-Analytic Procedures**

For interrater-agreement purposes, the first author and two coauthors coded an earlier version of the database with 598 effect sizes. Interrater agreement was 99.63% for the coding of PERMA intercorrelations and corresponding sample sizes and reliabilities and 93.57% for all other relationships. The first author resolved all discrepancies. See Supplemental Materials for more coding details. Using R package *psychmeta* (Dahlke & Wiernik, 2019), we conducted individually corrected, random-effects meta-analyses corrected for measurement unreliability (Schmidt & Hunter, 2015). We also used R packages *lavaan* (Rosseel, 2012) and *dominanceanalysis* (Bustos Navarrete & Coutinho Soares, 2020) to conduct meta-analytic confirmatory factor analysis (CFA) and dominance analysis, respectively. Dominance analysis highlights a regression predictor's contribution to variance explained relative to other predictors in a regression model (Azen & Budescu, 2003).

## **Results**

### **Reliabilities, Intercorrelations, and CFAs**

Unreliability-corrected PERMA intercorrelations by measure are presented in Tables 1–2. Each dimension's average reliability is in these tables' notes. It is worth noting that engagement measured by the PERMA-Profiler ( $\bar{\alpha} = .63$ ) and Workplace PERMA Profiler ( $\bar{\alpha} = .69$ ) did not meet the conventional .70 reliability threshold. Average reliabilities for overall PERMA by measure as well as general negative emotions, work-related negative emotions, depressive symptoms, and health are in the notes of Tables 5–7. It is worth noting that general negative emotions' average reliability ( $\bar{\alpha} = .69$ ) was just under the conventional reliability threshold.

All PERMA intercorrelations were positive and very strong across the measures: average  $\bar{\rho}_{\text{PERMA-Profiler}} = .72$ , and average  $\bar{\rho}_{\text{Workplace PERMA Profiler}} = .79$ . We used these

intercorrelations as input for our meta-analytic CFAs. We considered the following acceptable fit:  $RMSEA \leq .06$ ,  $CFI \geq .95$ , and  $SRMR \leq .08$  (see Hu & Bentler, 1999). As shown in Tables 3–4, a one-factor PERMA model (see Figure 1) had very large RMSEAs across the two measures. In contrast, most two-factor models exhibited significantly better fit; however, fit was still poor for all but one of these models: Model 2 (i.e., PER and MA) for the PERMA-Profiler. This model exhibited a lower, albeit mediocre (see MacCallum et al., 1996), RMSEA of .10.

### **PERMA's Relationships With Other Variables**

As shown in Table 5, overall PERMA (measured with the PERMA-Profiler) was positively and moderately related to conscientiousness ( $\bar{\rho} = .48$ , 95% CI [0.11, 0.85]). The majority of correlations involving PERMA and loneliness were negative and weak to strong ( $\bar{\rho}$ s range from  $-.15$  to  $-.57$ ). Two exceptions were the nonsignificant relationships between engagement and both general loneliness involving the PERMA-Profiler ( $\bar{\rho} = -.29$ , 95% CI [-0.85, 0.27]) and work-related loneliness involving the Workplace PERMA Profiler ( $\bar{\rho} = -.15$ , 95% CI [-0.31, -0.00]).

As presented in Table 6, all PERMA dimensions and overall PERMA were positively and strongly related to happiness ( $\bar{\rho}$ s range from  $.66$  to  $.89$ ). All PERMA dimensions and overall PERMA were negatively and weakly-to-strongly related to negative emotions ( $\bar{\rho}$ s range from  $-.20$  to  $-.53$ ).

As seen in Table 7, all relationships between PERMA and (physical) health were positive and moderate to strong ( $\bar{\rho}$ s range from  $.38$  to  $.60$ ). Given that health items were identical across the two measures, we exploratorily examined measure as a moderator.<sup>4</sup> Health was more strongly related to engagement, meaning, and accomplishment measured with the PERMA-

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<sup>4</sup> We thank an anonymous reviewer for encouraging us to investigate potential moderators.

Profiler (see Table 7). All relationships between PERMA and depressive symptoms involving the Workplace PERMA Profiler were negative and moderate to strong ( $\bar{\rho}$ s range from -.44 to -.62). All relationships between PERMA and overall job performance involving the Workplace PERMA Profiler were positive and moderate to strong ( $\bar{\rho}$ s range from .49 to .67).

### **Dominance Analyses**

The full results of the dominance analyses involving PERMA in relation to its outcomes are presented in Supplemental Tables 3–6. When predicting health with the PERMA-Profiler ( $R^2 = .42$ ), positive emotions (average  $\%R^2 = 21.43$ ) completely dominated engagement and positive relationships. Engagement (average  $\%R^2 = 19.05$ ) completely dominated positive relationships. Positive relationships (average  $\%R^2 = 9.52$ ) did not exhibit dominance. Meaning (average  $\%R^2 = 23.81$ ) completely dominated engagement and positive relationships and generally dominated positive emotions. Accomplishment (average  $\%R^2 = 26.19$ ) completely dominated engagement, positive relationships, and meaning and conditionally dominated positive emotions.

When predicting health with the Workplace PERMA Profiler ( $R^2 = .40$ ),<sup>5</sup> positive emotions (average  $\%R^2 = 42.50$ ) completely dominated all other dimensions. Engagement (average  $\%R^2 = 17.50$ ) generally dominated positive relationships, meaning, and accomplishment. Positive relationships (average  $\%R^2 = 17.50$ ) generally dominated meaning and accomplishment. Meaning (average  $\%R^2 = 12.50$ ) generally dominated accomplishment. Accomplishment (average  $\%R^2 = 12.50$ ) did not exhibit dominance.

When predicting depressive symptoms with the Workplace PERMA Profiler ( $R^2 = .45$ ), positive emotions (average  $\%R^2 = 46.67$ ) completely dominated all other dimensions. Engagement (average  $\%R^2 = 15.56$ ) conditionally dominated positive relationships and generally

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<sup>5</sup> Due to rounding, average  $\%R^2$ s do not sum to 100% for this model.



dominated meaning and accomplishment. Positive relationships (average  $\%R^2 = 11.11$ ) did not exhibit dominance. Meaning (average  $\%R^2 = 13.33$ ) generally dominated positive relationships. Accomplishment (average  $\%R^2 = 13.33$ ) generally dominated positive relationships and meaning.

When predicting overall job performance with the Workplace PERMA Profiler ( $R^2 = .51$ ),<sup>6</sup> positive emotions (average  $\%R^2 = 11.76$ ) did not exhibit dominance. Engagement (average  $\%R^2 = 15.69$ ) conditionally dominated positive emotions and meaning. Positive relationships (average  $\%R^2 = 17.65$ ) completely dominated positive emotions, conditionally dominated meaning, and generally dominated engagement. Meaning (average  $\%R^2 = 13.73$ ) conditionally dominated positive emotions. Accomplishment (average  $\%R^2 = 43.14$ ) completely dominated all other dimensions.

### Discussion

In the present study, we meta-analyzed worker PERMA. Some variables exhibited relatively lower reliability: engagement measured with both the PERMA-Profiler and Workplace PERMA Profiler and negative emotions measured with the former. Across the two measures, we observed positive, strong PERMA intercorrelations but poorly fitting measurement models (although most two-factor models fit better than the one-factor model). Additionally, PERMA was related to all antecedents, correlates, and outcomes examined with one exception: engagement in relation to loneliness. We also found that when predicting depressive symptoms and health with the Workplace PERMA Profiler, positive emotions exhibited the most incremental validity. When predicting health with the PERMA-Profiler and overall job

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<sup>6</sup> Due to rounding, average  $\%R^2$ s do not sum to 100% for this model.

performance with the Workplace PERMA Profiler, accomplishment exhibited the most incremental validity. Measure moderated some PERMA–health relationships.

Our findings highlight the importance of further refining the measurement of PERMA. Although the PERMA dimensions exhibit a positive manifold with working samples, there is no general factor underlying this phenomenon; thus, although we reported relationships involving overall PERMA, we urge against computing an overall PERMA score. Moreover, most two-factor models suggest multidimensionality with some potential PERMA dimension groupings (e.g., P + E). To investigate whether the purported five-factor model holds, other researchers can consider conducting item-level meta-analyses (see Carpenter et al., 2016) or extending Butler and Kern’s (2016) original validation study. Additionally, the aforementioned lower reliabilities highlight opportunities for further scale refinement/development. These psychometric considerations add to the literature underscoring PERMA’s statistical problems, which have been acknowledged by Kern (2022).

As mentioned previously, all relationships were significant except those between engagement and loneliness. In contrast, loneliness was strongly associated with positive relationships measured with the PERMA-Profiler and, regarding absolute relationship strength, most strongly associated with positive relationships measured with the Workplace PERMA Profiler. Such examples of PERMA dimensions exhibiting differing relationships paired with our dominance analysis and moderator findings further highlight the importance of treating PERMA dimensions as distinct components of well-being. Consequently, it would be prudent when designing PERMA-based interventions for researchers and practitioners to be deliberate in their choice of variables (e.g., work-related positive emotions for physical health, work-related accomplishment for job performance). To better contextualize PERMA within the organizational

literature, we also recommend more researchers and practitioners measure both general and work-related PERMA variables simultaneously alongside well established measures of worker well-being (e.g., work engagement, job satisfaction).

The most notable limitation of the present study is the preponderance of cross-sectional samples. Although we grouped relationships into those involving conceptual PERMA antecedents, correlates, and outcomes, we were unable to formally assess causality. Additionally, it is possible that common-source variance may be upwardly biasing the strength of the meta-analyzed relationships (see Podsakoff et al., 2003). We encourage others to implement multiple rating sources (e.g., objective health outcomes, supervisor-rated performance) and timepoints. To better establish PERMA's predictive validity, future research must move beyond cross-sectional same-source measurement—especially given that links between well-being and performance vary according to performance rating source (Moscoso & Salgado, 2021). Additionally, although many meta-analytic correlations were based on sufficiently large numbers of studies (e.g., PERMA intercorrelations) some meta-analytic correlations were estimated using relatively fewer studies (e.g.,  $k = 3$  for the PERMA–conscientiousness relationship). Given potential second-order sampling error (see Schmidt & Hunter, 2015), readers should interpret such estimates with caution. Relatedly, given the relatively small number of studies, we were unable to conduct subgroup analyses by sample type. We recommend that researchers implement more rigorous study designs to further clarify PERMA's nomological network and evaluate PERMA's validity across different occupational and national contexts.

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**Table 1**

*Unreliability-Corrected Meta-Analytic PERMA Intercorrelations for the PERMA-Profiler*

Variable	1	2	3	4
1. Positive emotions				
2. Engagement	.75			
<i>k</i>	16			
<i>N</i>	3,624			
<i>SD<sub>p</sub></i>	0.17			
95% CI	[0.66, 0.85]			
3. Positive relationships	.73	.66		
<i>k</i>	17	16		
<i>N</i>	3,646	3,621		
<i>SD<sub>p</sub></i>	0.15	0.15		
95% CI	[0.65, 0.81]	[0.57, 0.75]		
4. Meaning	.73	.71	.71	
<i>k</i>	17	16	17	
<i>N</i>	3,643	3,618	3,646	
<i>SD<sub>p</sub></i>	0.16	0.15	0.10	
95% CI	[0.65, 0.82]	[0.62, 0.80]	[0.65, 0.77]	
5. Accomplishment	.72	.72	.64	.81
<i>k</i>	16	16	16	16
<i>N</i>	3,623	3,627	3,620	3,617
<i>SD<sub>p</sub></i>	0.20	0.24	0.15	0.13
95% CI	[0.61, 0.83]	[0.59, 0.85]	[0.56, 0.73]	[0.74, 0.89]

*Note.* Harmonic mean  $N = 3,181$ ;  $k$  = number of independent samples;  $N$  = sample size;  $SD_p$  = standard deviation of unreliability-corrected correlation; 95% CI = 95% confidence interval around unreliability-corrected correlation. Average coefficient as from independent samples in database:  $\bar{a}_{\text{Positive emotions}} = .86$ ;  $\bar{a}_{\text{Engagement}} = .63$ ;  $\bar{a}_{\text{Positive relationships}} = .78$ ;  $\bar{a}_{\text{Meaning}} = .80$ ;  $\bar{a}_{\text{Accomplishment}} = .72$ .

**Table 2**

*Unreliability-Corrected Meta-Analytic PERMA Intercorrelations for the Workplace PERMA*

*Profiler*

Variable	1	2	3	4
1. Positive emotions				
2. Engagement	.89			
<i>k</i>	14			
<i>N</i>	3,887			
<i>SD<sub>p</sub></i>	0.08			
95% CI	[0.84, 0.95]			
3. Positive relationships	.79	.67		
<i>k</i>	15	14		
<i>N</i>	4,097	3,887		
<i>SD<sub>p</sub></i>	0.06	0.13		
95% CI	[0.75, 0.84]	[0.59, 0.75]		
4. Meaning	.86	.89	.74	
<i>k</i>	14	14	14	
<i>N</i>	3,887	3,887	3,887	
<i>SD<sub>p</sub></i>	0.06	0.09	0.09	
95% CI	[0.82, 0.90]	[0.84, 0.95]	[0.68, 0.80]	
5. Accomplishment	.74	.77	.67	.83
<i>k</i>	14	14	14	14
<i>N</i>	3,885	3,885	3,885	3,885
<i>SD<sub>p</sub></i>	0.18	0.11	0.20	0.19
95% CI	[0.63, 0.85]	[0.70, 0.84]	[0.55, 0.79]	[0.71, 0.94]

*Note.* Harmonic mean  $N = 2,538$ ;  $k$  = number of independent samples;  $N$  = sample size;  $SD_p$  = standard deviation of unreliability-corrected correlation; 95% CI = 95% confidence interval around unreliability-corrected correlation. Average coefficient as from independent samples in database:  $\bar{a}_{\text{Positive emotions}} = .84$ ;  $\bar{a}_{\text{Engagement}} = .69$ ;  $\bar{a}_{\text{Positive relationships}} = .78$ ;  $\bar{a}_{\text{Meaning}} = .83$ ;  $\bar{a}_{\text{Accomplishment}} = .72$ .



**Table 3**

*Meta-Analytic PERMA Measurement Models for the PERMA-Profiler*

Model	$\chi^2 (df)$	$\Delta\chi^2 (\Delta df)$	<i>p</i>	CFI	RMSEA	SRMR
1. One factor: PERMA	477.29 (5)		< .001	.97	.16	.03
2. Two factors: PER and MA	153.58 (4)		< .001	.99	.10	.01
3. Two factors: PEM and RA	293.10 (4)		< .001	.98	.14	.02
4. Two factors: PEA and RM	474.21 (4)		< .001	.97	.18	.03
5. Two factors: PRM and EA	477.27 (4)		< .001	.97	.18	.03
6. Two factors: PRA and EM	384.33 (4)		< .001	.97	.16	.02
7. Two factors: PMA and ER	476.83 (4)		< .001	.97	.18	.03
8. Two factors: ERM and PA	409.11 (4)		< .001	.97	.17	.02
9. Two factors: ERA and PM	318.96 (4)		< .001	.98	.15	.02
10. Two factors: EMA and PR	338.60 (4)		< .001	.98	.15	.02
11. Two factors RMA and PE	367.46 (4)		< .001	.97	.16	.03
Model 1 vs. Model 2		323.71 (1)	< .001			
Model 1 vs. Model 3		184.19 (1)	< .001			
Model 1 vs. Model 4		3.08 (1)	.080			
Model 1 vs. Model 5		0.02 (1)	.891			
Model 1 vs. Model 6		92.96 (1)	< .001			
Model 1 vs. Model 7		0.46 (1)	.499			
Model 1 vs. Model 8		68.18 (1)	< .001			
Model 1 vs. Model 9		158.33 (1)	< .001			
Model 1 vs. Model 10		138.69 (1)	< .001			
Model 1 vs. Model 11		109.83 (1)	< .001			

*Note.* Harmonic mean  $N = 3,628$ ;  $\chi^2$  = chi-square; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A).

**Table 4**

*Meta-Analytic PERMA Measurement Models for the Workplace PERMA Profiler*

Model	$\chi^2 (df)$	$\Delta\chi^2 (\Delta df)$	$p$	CFI	RMSEA	SRMR
1. One factor: PERMA	1,350.80 (5)		< .001	.94	.26	.03
2. Two factors: PER and MA	1,003.51 (4)		< .001	.95	.25	.03
3. Two factors: PEM and RA	1,341.23 (4)		< .001	.94	.29	.03
4. Two factors: PEA and RM	1,350.80 (4)		< .001	.94	.29	.03
5. Two factors: PRM and EA	1,307.59 (4)		< .001	.94	.29	.03
6. Two factors: PRA and EM	1,332.27 (4)		< .001	.94	.29	.03
7. Two factors: PMA and ER	638.57 (4)		< .001	.97	.20	.02
8. Two factors: ERM and PA	1,074.51 (4)		< .001	.95	.26	.02
9. Two factors: ERA and PM	807.17 (4)		< .001	.96	.23	.03
10. Two factors: EMA and PR	907.00 (4)		< .001	.96	.24	.02
11. Two factors RMA and PE	1,038.36 (4)		< .001	.95	.26	.03
Model 1 vs. Model 2		347.29 (1)	< .001			
Model 1 vs. Model 3		9.57 (1)	.002			
Model 1 vs. Model 4		0.00 (1)	.994			
Model 1 vs. Model 5		43.21 (1)	< .001			
Model 1 vs. Model 6		18.53 (1)	< .001			
Model 1 vs. Model 7		712.23 (1)	< .001			
Model 1 vs. Model 8		276.29 (1)	< .001			
Model 1 vs. Model 9		543.63 (1)	< .001			
Model 1 vs. Model 10		443.80 (1)	< .001			
Model 1 vs. Model 11		312.44 (1)	< .001			

*Note.* Harmonic mean  $N = 3,906$ ;  $\chi^2 =$  chi-square; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A).

**Table 5**

*Meta-Analytic PERMA–Antecedent Relationships*

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>ρ</sub></i>	%Var	95% CI		80% CrI	
									L	U	L	U
PERMA	Conscientiousness	PP	3	661	.40	.48	0.13	22.09	0.11	0.85	0.24	0.73
P	General loneliness	PP	4	128	-.52	-.57	0.12	57.85	-0.86	-0.27	-0.76	-0.37
E	General loneliness	PP	4	128	-.24	-.29	0.27	40.07	-0.85	0.27	-0.74	0.16
R	General loneliness	PP	4	128	-.51	-.56	0.11	65.57	-0.85	-0.27	-0.73	-0.38
M	General loneliness	PP	4	128	-.40	-.45	0.00	100.00	-0.69	-0.20	-0.45	-0.45
A	General loneliness	PP	4	128	-.28	-.36	0.00	100.00	-0.52	-0.20	-0.36	-0.36
PERMA	General loneliness	PP	4	128	-.48	-.53	0.03	95.49	-0.78	-0.29	-0.59	-0.48

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>ρ</sub></i>	%Var	95% CI		80% CrI	
									L	U	L	U
P	Work-related loneliness	WPP	7	1,476	-.29	-.31	0.08	39.96	-0.41	-0.21	-0.43	-0.19
E	Work-related loneliness	WPP	7	1,476	-.13	-.15	0.15	22.72	-0.31	-0.00	-0.36	0.06
R	Work-related loneliness	WPP	7	1,476	-.30	-.33	0.13	24.23	-0.47	-0.20	-0.51	-0.15
M	Work-related loneliness	WPP	7	1,476	-.23	-.25	0.15	19.52	-0.40	-0.10	-0.46	-0.04
A	Work-related loneliness	WPP	7	1,476	-.19	-.22	0.09	44.05	-0.33	-0.11	-0.35	-0.10
PERMA	Work-related loneliness	WPP	7	1,476	-.27	-.27	0.13	21.94	-0.41	-0.14	-0.46	-0.09

*Note.* PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A);

*k* = number of studies contributing to meta-analysis; *N* = total sample size;  $\bar{r}$  = mean sample-size-weighted correlation;  $\bar{\rho}$  = mean true-score correlation corrected for unreliability in the predictor and outcome; *SD<sub>ρ</sub>* = standard deviation of  $\bar{\rho}$ ; %Var = percentage of variance attributable to artifacts; CI = confidence interval around  $\bar{\rho}$ ; CrI = credibility interval around  $\bar{\rho}$ ; PP = PERMA-Profiler; WPP = Workplace PERMA Profiler. Average coefficient as from independent samples in database:  $\bar{\alpha}_{\text{Overall PERMA (PP)}} = .90$ ;

$\bar{\alpha}_{\text{Overall PERMA (WPP)}} = .92$  (see Tables 1–2’s notes for average coefficient as of the PERMA dimensions).

**Table 6**

*Meta-Analytic PERMA–Correlate Relationships*

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>ρ</sub></i>	%Var	95% CI		80% CrI	
									L	U	L	U
P	General happiness	PP	3	81	.85	.89	0.00	100.00	0.87	0.91	0.89	0.89
E	General happiness	PP	3	81	.57	.78	0.00	100.00	0.52	1.04	0.78	0.78
R	General happiness	PP	3	81	.73	.82	0.22	18.75	0.20	1.43	0.40	1.23
M	General happiness	PP	3	81	.74	.83	0.00	100.00	0.69	0.98	0.83	0.83
A	General happiness	PP	3	81	.58	.66	0.00	100.00	0.50	0.83	0.66	0.66
PERMA	General happiness	PP	3	81	.86	.89	0.00	100.00	0.77	1.02	0.89	0.89
P	Work-related happiness	WPP	5	849	.77	.85	0.07	20.22	0.75	0.95	0.74	0.96
E	Work-related happiness	WPP	5	849	.55	.66	0.15	16.28	0.46	0.86	0.43	0.88
R	Work-related happiness	WPP	5	849	.58	.66	0.10	27.23	0.53	0.80	0.52	0.81
M	Work-related happiness	WPP	5	849	.67	.74	0.10	18.49	0.60	0.87	0.58	0.89
A	Work-related happiness	WPP	5	849	.58	.68	0.07	46.18	0.56	0.79	0.57	0.78
PERMA	Work-related happiness	WPP	5	849	.75	.79	0.07	20.04	0.69	0.88	0.68	0.89

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>p</sub></i>	%Var	95% CI		80% CrI	
									L	U	L	U
P	General negative emotions	PP	8	991	-.41	-.53	0.31	7.87	-0.80	-0.26	-0.97	-0.09
E	General negative emotions	PP	8	995	-.23	-.32	0.23	21.88	-0.54	-0.10	-0.64	0.00
R	General negative emotions	PP	8	993	-.31	-.41	0.25	14.38	-0.63	-0.18	-0.76	-0.06
M	General negative emotions	PP	9	1,509	-.25	-.35	0.23	14.46	-0.55	-0.16	-0.68	-0.03
A	General negative emotions	PP	8	994	-.36	-.47	0.21	18.93	-0.67	-0.28	-0.77	-0.18
PERMA	General negative emotions	PP	8	985	-.39	-.46	0.27	9.79	-0.70	-0.22	-0.85	-0.08

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>ρ</sub></i>	%Var	95% CI		80% CrI	
									L	U	L	U
P	Work-related negative emotions	WPP	11	2,937	-.42	-.52	0.08	37.60	-0.59	-0.45	-0.63	-0.41
E	Work-related negative emotions	WPP	11	2,937	-.15	-.20	0.08	50.02	-0.28	-0.12	-0.32	-0.09
R	Work-related negative emotions	WPP	11	2,937	-.31	-.40	0.07	50.38	-0.47	-0.33	-0.50	-0.30
M	Work-related negative emotions	WPP	11	2,937	-.29	-.36	0.08	45.65	-0.43	-0.29	-0.47	-0.26
A	Work-related negative emotions	WPP	11	2,937	-.20	-.28	0.29	7.12	-0.47	-0.08	-0.67	0.12
PERMA	Work-related negative emotions	WPP	11	2,937	-.34	-.41	0.09	32.58	-0.49	-0.34	-0.54	-0.28

*Note.* PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A);

*k* = number of studies contributing to meta-analysis; *N* = total sample size;  $\bar{r}$  = mean sample-size-weighted correlation;  $\bar{\rho}$  = mean true-score correlation corrected for unreliability in the predictor and outcome; *SD<sub>ρ</sub>* = standard deviation of  $\bar{\rho}$ ; %Var = percentage of variance attributable to artifacts; CI = confidence interval around  $\bar{\rho}$ ; CrI = credibility interval around  $\bar{\rho}$ ; PP = PERMA-Profiler; WPP = Workplace PERMA Profiler. Average coefficient as from independent samples in database:  $\bar{\alpha}_{\text{Overall PERMA (PP)}} = .90$ ;  
 $\bar{\alpha}_{\text{Overall PERMA (WPP)}} = .92$ ;  $\bar{\alpha}_{\text{General negative emotions}} = .69$ ;  $\bar{\alpha}_{\text{Work-related negative emotions}} = .74$  (see Tables 1–2’s notes for average coefficient as of the PERMA dimensions).

**Table 7**

*Meta-Analytic PERMA–Outcome Relationships*

PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	<i>SD<sub>ρ</sub></i>	% Var	95% CI		80% CrI		<i>Z</i>
									L	U	L	U	
P	Physical health	PP	9	1,751	.50	.57	0.11	25.00	0.47	0.66	0.41	0.72	0.37
P	Physical health	WPP	10	2,893	.49	.56	0.06	44.85	0.50	0.61	0.48	0.63	
E	Physical health	PP	8	430	.35	.55	0.00	100.00	0.40	0.70	0.55	0.55	2.62
E	Physical health	WPP	10	2,893	.30	.38	0.10	31.19	0.29	0.47	0.24	0.52	
R	Physical health	PP	8	428	.33	.45	0.19	46.46	0.23	0.67	0.17	0.72	-0.67
R	Physical health	WPP	10	2,893	.43	.49	0.10	23.68	0.41	0.57	0.35	0.63	
M	Physical health	PP	8	426	.43	.59	0.24	32.18	0.34	0.83	0.25	0.93	2.34
M	Physical health	WPP	10	2,893	.41	.46	0.05	51.18	0.40	0.52	0.39	0.54	
A	Physical health	PP	8	429	.38	.60	0.21	45.35	0.37	0.83	0.31	0.89	2.68
A	Physical health	WPP	10	2,891	.36	.44	0.21	8.15	0.28	0.59	0.15	0.72	
PERMA	Physical health	PP	9	1,054	.49	.56	0.10	41.54	0.46	0.67	0.42	0.71	0.94
PERMA	Physical health	WPP	10	2,893	.49	.53	0.08	27.82	0.46	0.59	0.42	0.64	
P	Depressive symptoms	WPP	3	1,487	-.55	-.62	0.06	23.40	-0.80	-0.44	-0.74	-0.50	
E	Depressive symptoms	WPP	3	1,487	-.39	-.47	0.07	30.03	-0.68	-0.26	-0.61	-0.34	
R	Depressive symptoms	WPP	3	1,487	-.38	-.44	0.04	55.10	-0.59	-0.29	-0.52	-0.36	
M	Depressive symptoms	WPP	3	1,487	-.43	-.49	0.04	50.38	-0.63	-0.34	-0.56	-0.41	
A	Depressive symptoms	WPP	3	1,487	-.40	-.48	0.05	46.79	-0.65	-0.32	-0.57	-0.39	
PERMA	Depressive symptoms	WPP	3	1,487	-.52	-.56	0.08	16.62	-0.78	-0.34	-0.71	-0.41	



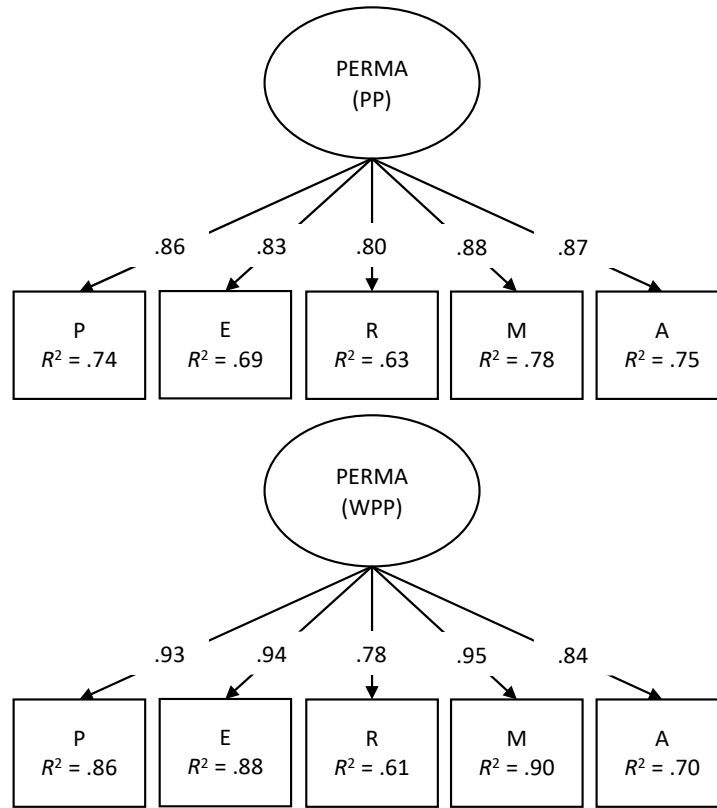
PERMA construct	Other construct	PERMA measure	<i>k</i>	<i>N</i>	$\bar{r}$	$\bar{\rho}$	$SD_{\rho}$	%Var	95% CI		80% CrI		<i>Z</i>
									L	U	L	U	
P	Overall job performance	WPP	3	659	.45	.49	0.16	12.74	0.08	0.91	0.20	0.79	
E	Overall job performance	WPP	3	659	.45	.54	0.15	15.80	0.14	0.93	0.26	0.81	
R	Overall job performance	WPP	3	659	.45	.54	0.07	46.96	0.30	0.77	0.41	0.67	
M	Overall job performance	WPP	3	659	.46	.52	0.08	34.42	0.27	0.77	0.36	0.68	
A	Overall job performance	WPP	3	659	.56	.67	0.20	6.76	0.15	1.19	0.29	1.06	
PERMA	Overall job performance	WPP	3	659	.56	.60	0.13	12.51	0.25	0.95	0.35	0.85	

*Note.* PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A);

*k* = number of studies contributing to meta-analysis; *N* = total sample size;  $\bar{r}$  = mean sample-size-weighted correlation;  $\bar{\rho}$  = mean true-score correlation corrected for unreliability in the predictor and outcome;  $SD_{\rho}$  = standard deviation of  $\bar{\rho}$ ; %Var = percentage of variance attributable to artifacts; CI = confidence interval around  $\bar{\rho}$ ; CrI = credibility interval around  $\bar{\rho}$ ; *Z* = *Z* score for subgroup comparisons (see Raju & Brand, 2003;  $Z > |1.96|$  = significant at  $p < .05$ ); PP = PERMA-Profiler; WPP = Workplace PERMA Profiler. Average coefficient as from independent samples in database:  $\bar{\alpha}_{\text{Overall PERMA (PP)}} = .90$ ;  $\bar{\alpha}_{\text{Overall PERMA (WPP)}} = .92$ ;  $\bar{\alpha}_{\text{Depressive symptoms}} = .91$ ;  $\bar{\alpha}_{\text{Physical health}} = .85$  (see Tables 1–2’s notes for average coefficient as of the PERMA dimensions).

**Figure 1**

*Factor Loadings of Meta-Analytic One-Factor PERMA Measurement Models*



*Note.* PERMA = positive relationships (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A); PP = PERMA-Profiler; WPP = Workplace PERMA Profiler. All factor loadings significant ( $p < .001$ ). PP model fit:  $\chi^2(5, N = 3,628) = 477.29, p < .001$ ; CFI = .97; RMSEA = .16; SRMR = .03. WPP model fit:  $\chi^2(5, N = 3,906) = 1,350.80, p < .001$ ; CFI = .94; RMSEA = .26; SRMR = .03.