CPP WHITE PAPER

WELL-BEING AND MBTI® PERSONALITY TYPE IN THE WORKPLACE

AN INTERNATIONAL COMPARISON

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INTRODUCTION

A primary goal for the vast majority of people is to have a happy and healthy life (Diener, 2000; Haybron, 2008; Ford et al., 2015). Measuring and enhancing well-being, also referred to as "happiness" in layperson's terminology, has become a key focus of research and practice in the growing field of positive psychology (Diener, 2000; Lyubomirsky, 2001; Seligman, 2011). An increasing number of researchers and practitioners have identified how a person's level of well-being influences a wide range of life outcomes, including his or her health, relationships, academic performance, creativity, collaboration, and income (Amabile, Barsade, Mueller, & Staw, 2005; Bryson et al., 2014; Diener & Tay, 2012; Heintzelman & King, 2014; Khaw & Kern, 2015; Lyubomirsky, King, & Diener, 2005; Seligman, 2011; Swart & Rothmann 2012). While the interest in well-being is not a new area of research, the past decade has seen significant developments in theory and methods for measuring human psychological well-being (Diener, Lucas, & Scollon, 2006; Diener & Tay, 2012; Kahneman & Krueger, 2006).

Researchers have made numerous attempts in recent years to define a framework for measuring well-being and its effects. Most attempts have been limited to measuring well-being as a single factor, such as happiness, life satisfaction, or even economic prosperity (Diener & Tay, 2012; Helliwell & Barrington-Leigh, 2010; Kahneman & Krueger, 2006; Khaw & Kern, 2015). Recently, however, Martin Seligman (2011) proposed a theory of well-being that underpins what he calls "flourishing," which now forms the basis of the most recent well-being research. The work of Seligman and his colleagues has inspired and prompted individuals, schools, organizations, and governments to implement the latest ways of evaluating and building well-being (Seligman, 2011, 2013).

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PERMA Well-being Model

Seligman's theory of well-being comprises five factors:

- **Positive Emotions**—the experience of hedonic feelings, such as happiness, contentment, and pleasure
- **Engagement**—deep psychological connection, absorption, and interest in an activity or a cause that is intrinsically motivating
- **Relationships**—where the positive aspects of the relationship greatly outnumber the negative aspects and involve mutual feelings of caring, support, and satisfaction
- **Meaning**—having a sense of purpose and direction in life and feeling connected to something bigger than oneself
- **Accomplishment**—pursuing success, winning, progress, or mastery for its own sake, regardless of whether it results in positive emotions, engagement, relationships, or meaning (Seligman, 2013)

These factors combined are commonly known as the PERMA well-being model. Seligman also proposed that each PERMA factor contributes to an individual's overall well-being; individuals pursue each factor for its own sake; and each factor is defined and measured independently from the others (Khaw & Kern, 2015; Seligman, 2011, 2013).

WELL-BEING IN THE WORKPLACE

Organizational psychologists and scientists are also now directing their attention to the effects of well-being in the workplace (Diener & Tay, 2012; Huppert & So, 2013; Oswald, Proto, & Sgroi, 2012; Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011; Swart & Rothmann, 2012). The importance of evaluating workplace well-being is highlighted by the significant amount of time people dedicate to their careers; the effect of employee well-being on business performance, and vice versa; and the impact that successful and unsuccessful workplaces have on communities and nations (Diener, 2000; Harter, Schmidt, & Keyes, 2002; Swart & Rothmann, 2012). Increasingly, people's well-being in the workplace is gaining attention because of the benefits employees, employers, and communities derive when their well-being is supported and enhanced. Diener and Tay (2012) conducted an extensive review of the scientific literature relating to well-being in the workplace, and their findings are best summarized with their conclusion:

> When workers are happy and enjoy their jobs they tend to work harder and better. Businesses with high work satisfaction are more productive. Their employees quit less and their customers are more loyal. Happier workers are more energetic, creative, and cooperative. It has been found that the share-value of companies with happy workers increases more over time compared to organizations with less happy employees, holding constant many control factors. Thus, even if an employer is only concerned with profits and the well-being of workers is not a goal, the employer should care about the subjective well-being of workers because it can add to the "bottom line" of company profits. Put simply, happy employees tend to be friendlier, more energetic, more creative, and more loyal to the organization. It is not surprising then that happy people tend to earn higher incomes in their lives. (Diener & Tay, 2012, p. 10)

While historically many employers have observed or assumed that "happy" managers and employees contribute to success in business, the latest well-being research provides clear evidence to support it (Fisher, 2010; Swart & Rothmann, 2012). These findings also highlight the importance of finding valid ways to measure and improve the well-being of people in their workplace.

INTERACTION BETWEEN PERSONALITY, CULTURE, AND WORKPLACE WELL-BEING

Well-being researchers also acknowledge and remind us that a person's well-being is one factor among others—such as genetics, intelligence, and social capital—contributing to life satisfaction as well as enjoyment and success in the workplace (Diener & Tay, 2012; Seligman, 2011). Two factors that have been extensively researched in the workplace by organizational psychologists are personality and culture. However, the interaction

between personality, culture, and well-being in the workplace has not been investigated to the same extent. While a number of researchers have commenced studying possible interactions between well-being and personality (Albuquerque, Pedroso de Lima, Matos, & Figueiredo, 2011) and culture (Diener, Oishi, & Lucas, 2003; Ford et al., 2015; Helliwell, Layard, & Sachs, 2013; Khaw & Kern, 2015; Lun & Bond, 2016; McMahan, Ryu, & Choi, 2014), these studies have faced the challenges of not measuring well-being with a consistent or unified theory (e.g., PERMA), and further they typically acknowledge that their findings are based on samples limited by size or geography (e.g., the United States vs. Malaysia) or employment status (e.g., teachers vs. students).

Furthermore, researchers investigating possible correlations between well-being and personality have largely relied on the measures relating to the five-factor model (FFM) of personality (Albuquerque et al., 2011; Costa & McCrae, 1992). Such research has indicated correlations between well-being and aspects of personality, specifically the FFM traits of Extraversion and Neuroticism; however, the consensus in the literature is that these links are ambiguous or require further research before conclusions can be made (Albuquerque et al., 2011; Diener et al., 2003; Lucas, 2008). Personality theories other than the five-factor model remain largely untested in the well-being research.

WELL-BEING AND MBTI® PERSONALITY TYPE

An extensively researched theory of personality widely used in workplaces internationally is Carl Jung's personality type theory (Jung, 1971) as measured by the *Myers-Briggs Type Indicator* (MBTI®) instrument (Myers, McCaulley, Quenk, & Hammer, 1998). The Myers-Briggs® typology is composed of four pairs of opposite preferences representing four different areas of personality. The four preference pairs are:

- **Extraversion (E) and Introversion (I)**—differentiating people who direct their energy primarily outward toward other people and events (E) from people who direct their energy primarily inward toward their inner environment, thoughts, and experiences (I)
- **Sensing (S) and Intuition (N)**—differentiating people who take in information primarily through the five senses and immediate experience (S) from people who take in information primarily through hunches and impressions and are more interested in future possibilities (N)
- **Thinking (T) and Feeling (F)**—differentiating people who make decisions primarily based on logic and objectivity (T) from people who make decisions primarily based on personal values and the effects their decisions will have on others (F)
- **Judging (J) and Perceiving (P)**—differentiating people who prefer structure, plans, and achieving closure quickly (J) from those who prefer flexibility, spontaneity, and keeping their options open (P)

Respondents complete the MBTI instrument and verification process to obtain a personality type from one of the 16 MBTI personality types falling within what is considered the healthy or non-abnormal range of personality. To date, there is no clear evidence of research having been conducted on potential links between the MBTI types and well-being. This is surprising given the extensive workplace research and application of the MBTI instrument. Further, our experience using the MBTI instrument for organizational applications indicates that MBTI practitioners are frequently asked by clients whether some personality types are happier than others. No clear answer to this question based on well-being research has been found to date. It is also unclear from the research literature whether people of different personality types use similar or different approaches to maintain or enhance their well-being.

CURRENT STUDY: DESIGN AND METHODOLOGY

Our purpose in conducting this study was to build on the research undertaken in the well-being field thus far by investigating people's experience of well-being in their workplace, from a diverse

international workforce sample, using the PERMA well-being model (Seligman, 2011). We also sought to investigate whether differences in well-being were influenced by the MBTI personality type of respondents, as well as their geographic location, occupation, and lifestyle activities they engage in to support their well-being. Here are the key questions this study sought to address:

- Does the level of well-being that people experience at work differ between global regions?
- Does MBTI personality type influence a person's well-being at work?
- Does MBTI personality type influence the ways people enhance their well-being?
- What lifestyle activities contribute to people's well-being?

As the study was designed to be exploratory, we did not define hypotheses for these questions. However, in light of the existing research, we did expect that differences in workplace well-being might exist between personality type preferences and geographic location. An overarching objective of the study was to identify how people of all personality types and from different geographic regions enhance their well-being in their work lives.

Workplace Well-being Sample Description

The workplace well-being sample used for the study comprised two distinct groups of individuals. The first group included those who had completed the MBTI assessment on CPP's SkillsOne online platform between January and May 2016 and who indicated a willingness to participate in future research. Individuals were randomly selected from the archive of MBTI respondents, with approximately 30,000 online invitations issued to potential respondents. The second group resulted from CPP's international MBTI distributors based outside the United States being asked to promote the study to their customers in their respective local regions. This approach resulted in a majority of the sample being drawn from the United States. Individuals in the sample were offered the opportunity

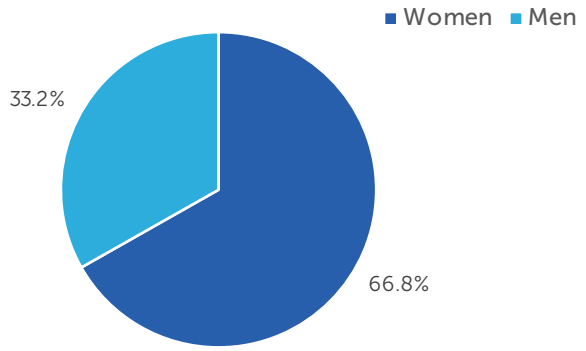

Figure 1 | **Workplace Well-being Sample Gender Distribution**

Note: N = 3,113. *Source:* Scullard & Baum, 2015.

to obtain a copy of this paper in recognition of their participation in the study.

The final sample consisted of 3,113 individuals who provided complete responses to the survey and who reported being "somewhat confident," "confident," or "very confident" about the accuracy of their MBTI type. The sample was 33% male and 67% female and included individuals from 87 different countries. The ages of respondents ranged from 18 to 81, with an average of 42 years (*SD* = 11). Sample details are shown in Figures 1–3.

Description of the Workplace Well-being Survey

The workplace well-being survey used in this study, titled the *Global Well-being at Work Inventory*™

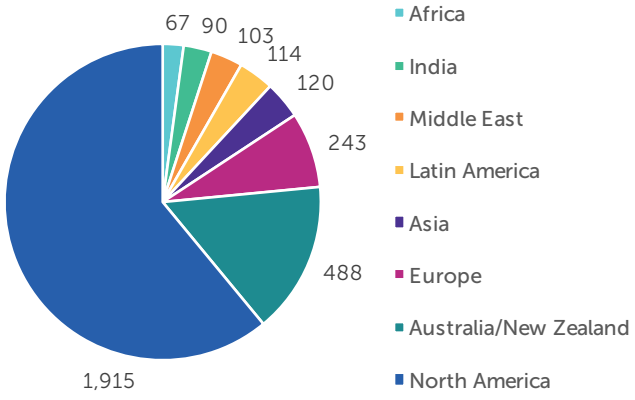

Figure 2 | **Workplace Well-being Sample by Geographic Region**

Note: N = 3,113. *Source:* Scullard & Baum, 2015.

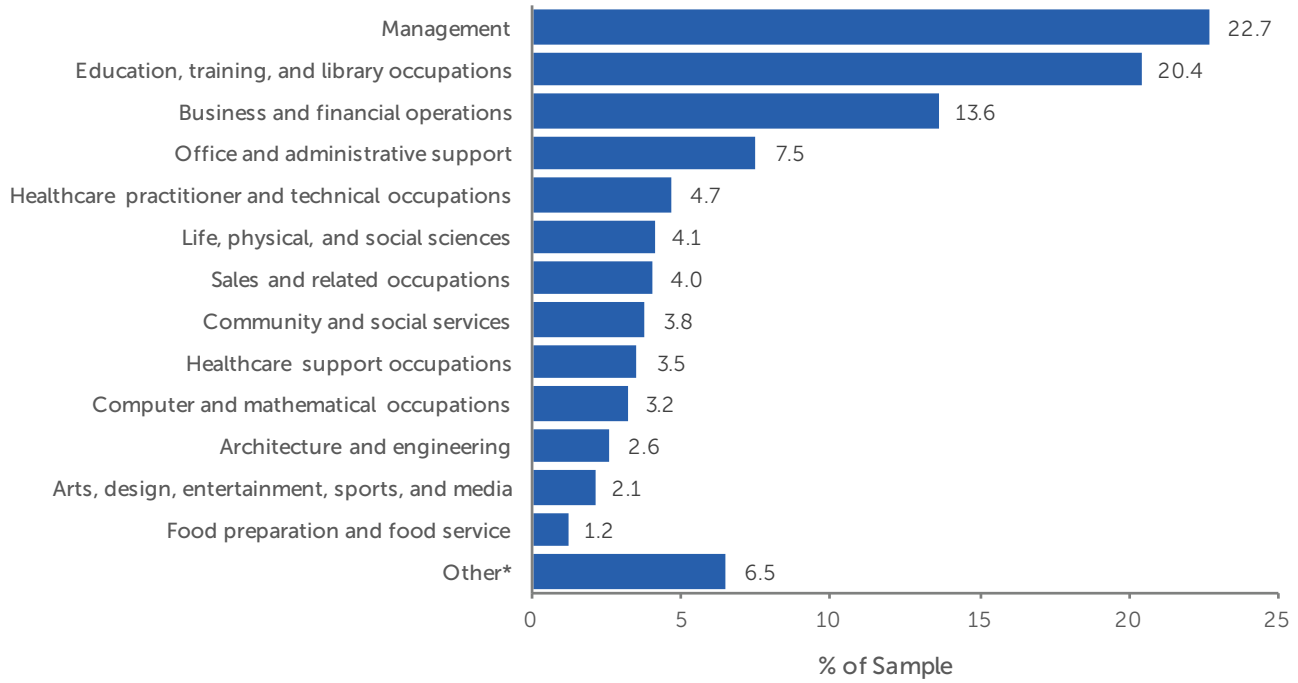

Figure 3 | **Workplace Well-being Sample Occupational Distribution**

Note: N = 3,113. "Other" includes legal occupations; production; military-specific occupations; transportation and materials moving; installation, maintenance, and repair; protective services; personal care and personal service; farming, fishing, and forestry; construction and extraction; building and grounds cleaning and maintenance—each 1% or less of the overall sample.

Source: Scullard & Baum, 2015.

(GWWI™), was developed by Dr. Martin Boult, one of the authors of the study, to evaluate Seligman's (2011) PERMA model of well-being as it relates to the workplace. The survey included demographic items, followed by (1) GWWI items measuring workplace well-being, and (2) a set of items measuring the frequency of use and effectiveness of activities employed by respondents to support their well-being. These items were adapted from the Australian Psychological Society's Stress and Wellbeing in Australia Survey (2015). (*Note:* For a more technical review of the GWWI, see the technical appendix at the back of this paper.)

Demographics Section

The demographic items consisted of questions about respondents' gender, age, occupation, country of residence, MBTI type (if known), and level of confidence that their reported or verified type was a good fit for them.

Workplace Well-being Measure Section

The well-being section of the survey comprised 28 items that make up the GWWI (see the technical appendix), measuring the five PERMA factors: Positive Emotions (8 items; e.g., how often the individual experiences happiness), Engagement (5 items; e.g., "I have opportunities to use my talents and strengths at work"), Relationships (5 items; e.g., "My work relationships are rewarding for me and others"), Meaning (5 items; e.g., "My work is meaningful and worthwhile"), and Accomplishment (5 items; e.g., "I feel a sense of achievement from what I do at work"). These items were phrased to measure well-being at work, rather than in general—for example, "I help and support the people I work with." The exception was the Positive Emotions items, which consisted of four positive and four negative emotional or psychological states—for example, "satisfied" as a positive emotional state and "pessimistic" as a negative emotional state. The respondents were

asked to indicate where they experienced each of the emotional or psychological states daily, using a 10-point rating scale anchored from "very rarely or never" (1) to "very often or always" (10). The remaining items were rated on a 10-point rating scale anchored from "strongly disagree" (1) to "strongly agree" (10). In addition to the five PERMA measures, responses to the 28 items were also averaged to calculate an overall measure of well-being.

Frequency of Use and Effectiveness of Well-being Activities Section

The second section of the well-being measure consisted of 25 two-part items asking respondents to indicate how frequently they engaged in specific activities to support their well-being and, if they had engaged in an activity, how effectively it supported their well-being. The activity frequency items included a 5-point response option ranging from 1 = "never" to 5 = "very often." The activity effectiveness items included a 6-point response option ranging from 1 = "do not use this activity" to 6 = "highly effective." Respondents were allowed to indicate a frequency of "never" and still provide a rating of effectiveness, though this rarely happened. The well-being activity items were adapted from the Australian Psychological Society's Stress and Wellbeing in Australia Survey (2015).

WORKPLACE WELL-BEING SURVEY RESULTS

Responses to the survey were analyzed to evaluate the key questions of focus in the study. The results of these analyses are summarized in the sections that follow.

MBTI® Type Distribution of the Workplace Well-being Sample

The MBTI type distribution of respondents who completed the workplace well-being survey used in the study is shown in Table 1 and is compared to that of the combined archival global representative sample (CAGRS) compiled by CPP (Thompson, 2017). The CAGRS includes data collected since the late 1990s comprising 22,794 individuals who completed the MBTI assessment through CPP and its authorized international distributors as part of CPP's development of representative samples. The CAGRS includes respondents from over 20 countries, with the majority residing in the United States and the UK. The table shows both the workplace well-being sample and the CAGRS in terms of the percentage of each MBTI type within the respective samples, along with a difference score, indicating where the workplace well-being survey sample may be either under- or overrepresented for each MBTI type in comparison with the CAGRS.

Table 1 | **MBTI® Type Distribution of the Workplace Well-being Sample (WWBS) and the Combined Archival Global Representative Sample (CAGRS)**

Sample	% of Sample by MBTI® Type			
	ISTJ	**ISFJ**	**INFJ**	**INTJ**
WWBS	6.7	5.9	8.3	9.8
CAGRS	15.1	9.5	2.1	2.4
Difference	–8.4	–3.6	6.2	7.4
	ISTP	**ISFP**	**INFP**	**INTP**
WWBS	3.1	3.2	8.7	6.3
CAGRS	9.0	6.9	5.8	4.4
Difference	–5.9	–3.7	2.9	1.9
	ESTP	**ESFP**	**ENFP**	**ENTP**
WWBS	3.7	3.5	9.4	6.8
CAGRS	5.8	6.5	8.0	4.0
Difference	–2.1	–3.0	1.4	2.8
	ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
WWBS	5.1	6.1	7.1	6.3
CAGRS	7.1	9.1	2.2	1.9
Difference	–2.0	–3.0	4.9	4.4

Note: Workplace well-being sample *N* = 3,113; CAGRS *N* = 22,794.

The distribution for most of the MBTI types in the workplace well-being sample was largely consistent

Table 2 | **Correlations Between PERMA Factors Measured by the Workplace Well-being Survey**

PERMA Factor	P	E	R	M	A	Overall Well-being	Mean	*SD*
Positive Emotions (P)	—	.488**	.454**	.499**	.531**	.758**	7.37	1.42
Engagement (E)	.488**	—	.454**	.792**	.657**	.850**	7.49	1.70
Relationships (R)	.454**	.454**	—	.459**	.498**	.668**	7.98	1.45
Meaning (M)	.499**	.792**	.459**	—	.689**	.903**	7.74	1.89
Accomplishment (A)	.531**	.657**	.498**	.689**	—	.758**	6.81	0.91
Overall Well-being	.758**	.850**	.668**	.903**	.758**	—	7.62	1.32

Note: Sample size ranges from 3,006 to 3,113 due to missing responses.
**Correlation is significant at the $p < 0.01$ level.

with the CAGRS. Of note, the ISTJ types were less represented in the study's sample relative to the CAGRS, while INTJ, INFJ, and ENFJ types were notably more represented. These differences may reflect type-related influences affecting self-selection into the study. However, the overall number of respondents in the workplace well-being sample for each of the 16 MBTI types was sufficient for between-type comparisons in the study.

Workplace Well-being Survey Measurement Properties

Descriptive statistics and correlations between measures of workplace well-being obtained from the overall sample are summarized in Table 2. The correlations among the PERMA factors are somewhat high, as are the correlations with the overall measure of well-being. Similar patterns have been found by other researchers measuring well-being with the PERMA model (Khaw & Kern, 2015). Note that the largest correlate with overall well-being was the Meaning factor (.903). This finding was also consistent with findings of other researchers using the PERMA model in their research (Khaw & Kern, 2015). (*Note:* Further analysis of the measurement properties of the workplace well-being survey can be found in the technical appendix.)

Analysis of Workplace Well-being Survey Results

Table 2 shows that the overall level of workplace well-being was generally positive, with an average rating for overall well-being of 7.62 (*SD* = 1.32) on a 10-point scale. Respondents tended to answer in the upper half of the response scales (scores of 5 to 10) across all 28 well-being items. This suggests that most respondents generally endorsed experiencing positive well-being.

An examination of the five individual PERMA factors measured by the workplace well-being survey also shows that respondents indicated positive well-being for each factor. Mean scores ranged from a high of 7.98 (*SD* = 1.45) for Relationships to a low of 6.81 (*SD* = 0.91) for Accomplishment.

Workplace Well-being by Geographic Region

The overall and PERMA factor measures of workplace well-being were examined based on the geographic region in which respondents resided. Geographic regions were identified based on self-reported country of residence selected in the demographic section of the survey. The results for geographic region were based on clustering together people who resided in geographically and culturally similar regions (i.e., North America, Latin America, Europe, India, Africa, Asia, Middle East, and Australia/New Zealand). The sample size for some

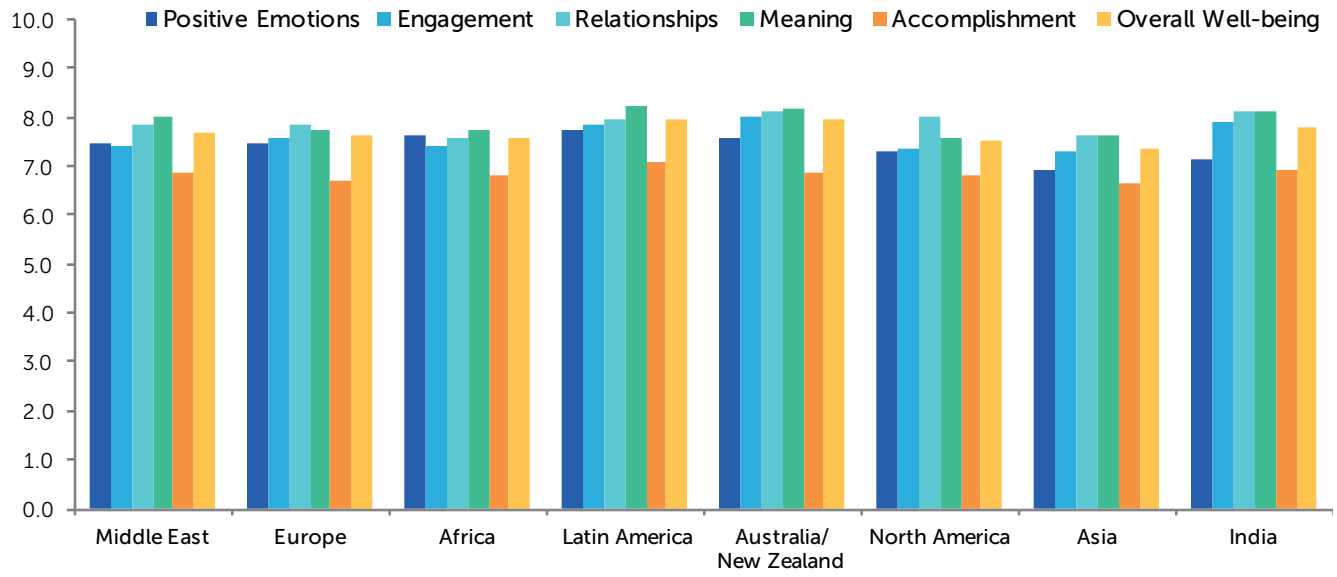

Figure 4 | **Workplace Well-being Based on Geographic Region**

Note: N = 3,113. Results on a 10-point scale.

regions, such as Asia, was limited by the number of respondents in that region and therefore not proportionally representative when compared with its general population. A low response rate from Asia may be due to the survey being offered only in English.

The results of this analysis are summarized in Figure 4 showing the overall measure of well-being along with the five PERMA well-being factors. The figure shows that the overall range of well-being, along with the PERMA factors, has an average rating of 6.5–8.5, with the lowest overall reported well-being by respondents residing in Asia (mean = 7.35, *SD* = 1.28) and the highest reported well-being by respondents residing in Latin America (mean = 7.95, *SD* = 1.18), closely followed by respondents residing in Australia and New Zealand (mean = 7.93, *SD* = 1.13).

When overall well-being was examined, significant statistical differences were found ($F(7, 3091) = 6.59$, $p < .001$), with Asia reporting a significantly lower level of well-being compared with Latin America, Australia/New Zealand, and India, and not being different for the other regions. Respondents located in Latin American reported significantly higher levels of well-being compared to respondents in Europe, North America, and Asia. An identical pattern was found for respondents in Australia/New Zealand. Analyses of the PERMA factors followed a similar pattern as that found for overall well-being.

Workplace Well-being by MBTI® Type

Similar analyses were conducted to explore the five PERMA well-being factors and overall well-being for each of the 16 MBTI types. Results are summarized in Figure 5. The figure shows a few notable patterns. First, well-being is lower overall for individuals with a preference for Introversion (I) compared to those with a preference for Extraversion (E). Additionally, individuals indicating ISTP preferences reported the lowest level of well-being of the 16 types (although still with a relatively high mean score of 7.00), and those indicating ENFP preferences (mean score of 8.08) reported the highest level of well-being. Statistical analyses revealed there were statistically significant differences in self-reported well-being ($F(1, 3097) = 12.38$, $p < .0001$). Post hoc analyses were conducted, and the results show that there were significant differences between the highest and lowest scores. The rank order of the types on the measures is shown in Table 3.

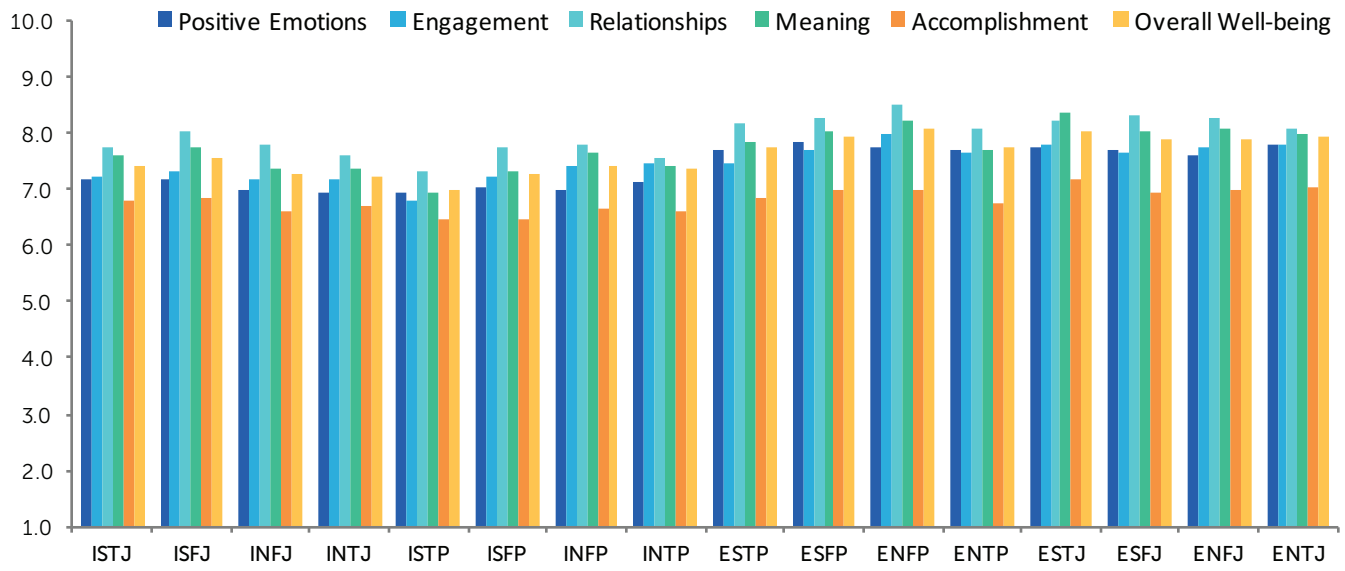

Figure 5 | **Workplace Well-being Based on MBTI® Type**

Note: N = 3,113. Results on a 10-point scale.

Table 3 | **Rank Order of MBTI® Types on the Workplace Well-being Factors from Highest to Lowest**

Overall Well-being	Positive Emotions	Engagement	Relationships	Meaning	Accomplishment
ENFP	ESFP	ENFP	ENFP	ESTJ	ESTJ
ESTJ	ENTJ	ESTJ	ESFJ	ENFP	ENTJ
ESFP	ESTJ	ENTJ	ESFP	ENFJ	ENFJ
ENTJ	ENFP	ENFJ	ENFJ	ESFJ	ENFP
ESFJ	ESTP	ESFP	ESTJ	ESFP	ESFP
ENFJ	ENTP	ENTP	ESTP	ENTJ	ESFJ
ESTP	ESFJ	ESFJ	ENTP	ESTP	ISFJ
ENTP	ENFJ	INTP	ENTJ	ISFJ	ESTP
ISFJ	ISFJ	ESTP	ISFJ	ENTP	ISTJ
ISTJ	ISTJ	INFP	INFJ	INFP	ENTP
INFP	INTP	ISFJ	INFP	ISTJ	INTJ
INTP	ISFP	ISTJ	ISTJ	INTP	INFJ
INFJ	INFJ	ISFP	ISFP	INFJ	INFP
ISFP	INFP	INFJ	INTJ	INTJ	INTP
INTJ	ISTP	INTJ	INTP	ISFP	ISTP
ISTP	INTJ	ISTP	ISTP	ISTP	ISFP

Note: N = 3,113.

A further multivariate analysis of variance (MANOVA) was conducted for the well-being factors, and significant differences were found based on whole type (i.e., four-letter type). The analyses of the PERMA factors contributing to overall well-being were also significant ($F(75, 14819.23) = 5.25$; Wilks' $\Lambda = .882$, $p < .0001$). The effect of type was small, but the pattern that emerges, summarized in Table 3, is highly consistent in terms of reported well-being of the respondents. With the exception of Positive Emotions and Accomplishment, ISTPs reported the lowest level of well-being across the PERMA factors, while ENFPs reported the highest levels for Engagement and Relationships, and ESTJs reported the highest levels for Meaning and Accomplishment. Small but significant differences were evident between the highest- and lowest-ranked types in the table for each of the PERMA factors and the overall measure of well-being.

The table displays the rank order of the 16 types for each PERMA factor and overall well-being, from highest to lowest. It shows that people with preferences for ENFP, ESTJ, and ENTJ tend to cluster toward the top, indicating generally higher levels of workplace well-being. Conversely, the table shows that people with preferences for ISTP and INTJ cluster toward the bottom, indicating generally lower levels of workplace well-being. However, it is important to remember that, as indicated in Figure 5, the differences between the average PERMA factor and overall well-being scores for each type are generally small—within about 1 point on a 10-point scale at most.

Predicting Well-being from MBTI® Preferences

An analysis of the well-being data was conducted to investigate whether overall well-being could be predicted from the MBTI preferences, along with the demographic information available, to determine whether variables other than type preferences accounted for the differences in well-being observed between whole MBTI types. This analysis used stepwise regression to predict overall well-being from respondents' age, gender, occupation, and geographic region. The analysis found significant results ($F(4, 3008) = 84.50$, $p < .001$) and identified four predictor variables that accounted for variance in the predictor after the prior variables were entered. These results are summarized in Table 4.

The *R*-squared change column reflects the additional variance accounted for in the entire model when each of the predictors is entered into the regression equation. Note that age and E–I preference account for most of the variance, and the total variance accounted for is small. However, the results indicate that individuals reported higher levels of well-being in the older age groups, and those with a preference for Extraversion (E) reported higher levels of well-being than those with a preference for Introversion (I). This finding

Table 4 | **Prediction of Workplace Well-being Based on Type Preferences and Demographic Characteristics**

Sample	*b*	Std error	Beta	*t*	Sig.	R^2 change
Constant	7.504	0.134	—	55.811	0.000	—
Age	0.026	0.002	0.228	13.188	0.000	0.051
E–I Preference	−0.565	0.046	−0.214	−12.352	0.000	0.047
Gender	0.099	0.050	0.035	2.004	0.045	0.002
T–F Preference	0.093	0.047	0.035	1.979	0.048	0.001

Note: Workplace well-being sample $N = 3{,}113$; CAGRS $N = 22{,}794$.

is consistent with previous research using related personality measures (Albuquerque et al., 2011; Diener et al., 2003; Lucas, 2008).

Together, these analyses show that although overall well-being is high across all personality types, differences between the MBTI types were indicated with respect to their experiences of workplace well-being. Of particular note, the level of Accomplishment was found to be the lowest for all PERMA factors across all 16 types, possibly indicating that factors other than personality type are influencing individuals' perception of what they achieve and accomplish in their work. Further, results from the regression analysis suggest that the whole-type differences observed in overall well-being are likely to be driven largely by the E or I preference of each personality type and to a lesser degree the T or F preference. The analysis also indicates that geographic region and occupation of respondents did not play an identifiable role in predicting well-being.

Analysis of Well-being Activities

The 25 items evaluating activities that respondents could use to help manage their well-being were analyzed next. These items were investigated at the individual item level, with an examination of both the frequency of use and effectiveness of the activity by geographic region and by MBTI type. For these analyses, geographic regions and MBTI types were compared to identify where respondents might differ in their approaches to improving their well-being. It should be noted that not all the items evaluating the activities were specifically work related. Instead, the items comprised a set of activities that were expected to be directly (e.g., "Going to work") or indirectly (e.g., "Adjusting my expectations" or "Focusing on positives") relevant to workplace well-being. Finally, the entire set of possible predictors was examined for the combined effect for frequency of use and effectiveness of the activity, MBTI type, and geographic region on overall well-being.

Frequency of Use and Effectiveness of Well-being Activities by Geographic Region

The responses to the 25 items assessing activities used to support well-being were compared using analysis of variance (ANOVA) and Tukey post hoc analyses, comparing each item for mean differences based on the geographic region categories. The overall pattern of the mean frequency of use for each activity is summarized in Figure 6, while the significant differences based on the post hoc analysis are summarized in Table 5.

(*Note:* In Tables 5–8, statistically significant post hoc differences are summarized using letters to reflect the magnitude of the difference, as follows:

- L = low [significantly lower than other regions]
- ML = moderately low [significantly lower than M but significantly higher than L]
- M = moderate [significantly lower than MH but significantly higher than ML]
- MH = moderately high [significantly lower than H but significantly higher than M]
- H = high [significantly higher than all other regions]

For example, a row with an L and an H indicates that the frequency of use or effectiveness rating of an activity in the region heading the column with the L was significantly lower than that in the region in the column with the H. Similarly, a row with an M indicates that the frequency of use or effectiveness rating of the activity in the corresponding region was significantly higher than that of the region with the L but significantly lower than that of the region with the H, and so on. Conversely, an activity with no letters in the associated row indicates there were no significant differences based on the post hoc analysis. These tables provide a visual summary of significant differences of the values plotted in Figures 6–9.)

Table 5, along with Figure 6, make evident a number of interesting trends. Respondents in different regions tended to endorse items that clustered into different categories. Of note, respondents from Africa had high scores on the two items associated with religion or spirituality. In contrast, respondents

Table 5 | **Frequency of Use of Well-being Activities by Geographic Region**

Activity	Middle East	Europe	Africa	Latin America	Australia/ New Zealand	North America	Asia	India
Watching television/movies					H		L	
Listening to or playing music*								
Reading								H
Playing video games							H	
Shopping	H					L		
Watching sports	L	L	H					L
Focusing on positives			H	M				L
Adjusting my expectations		L						H
Considering other perspectives*								
Using stress management techniques	M		H	L	H	M		M
Mindfulness techniques	H	L	M		M			H
Spending time with family/ friends*								
Eating meals with others*								
Attending parties				H				
Participating in online social activities*								
Eating healthy	ML	ML	M		H	ML	L	ML
Massage		L			M	L		H
Meditation*								
Yoga				L	M			H
Exercise					H		L	L
Playing sports					L			H
Walking		H	H	L	H			
Participating in religious activities	MH	L	H	ML		MH		ML
Reading spiritual literature	MH	L	H				ML	ML
Going to work		L	H		L			

Note: Sample sizes range from 3,006 to 3,113 due to missing responses. L = low (significantly lower than other regions); ML = moderately low (significantly lower than M but significantly higher than L); M = moderate (significantly lower than MH but significantly higher than ML); MH = moderately high (significantly lower than H but significantly higher than M); H = high (significantly higher than all other regions).

*No significant differences between geographic regions.

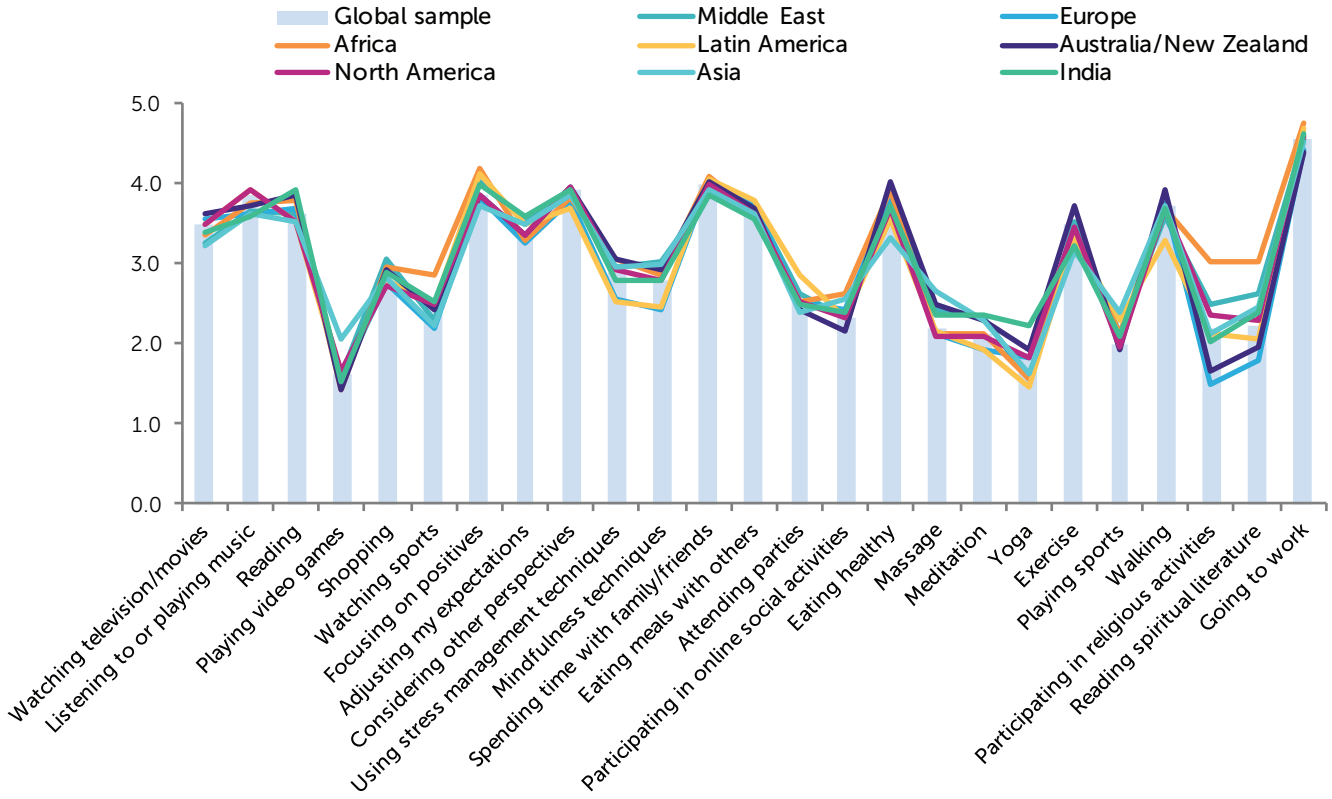

Figure 6 | **Frequency of Use of Activities Supporting Well-being by Geographic Region**

Note: $N = 3{,}113$.

from Europe had the lowest scores on these items. Also, respondents from Australia and New Zealand had higher scores on several more intrapersonal approaches (e.g., "Using stress management techniques"). Overall, respondents from Europe were among the lowest-scoring respondents on 7 of the 25 items, while respondents from Africa were among the highest-scoring respondents on 7 of the 25 items, with respondents from India reporting high frequency for 6 activities, and Australia and New Zealand respondents reporting high frequency of use for 5 of the 25 items.

The analysis of the 25 items examining the effectiveness of these activities is summarized in Table 6 and Figure 7. The pattern here is similar to that found for the frequency of use of the activities. Again, respondents from Africa indicated that the two items associated with religion and spirituality were effective, while the European respondents rated these items significantly lower. Regarding effectiveness, the North American and European respondents each rated 6 of the 25 items significantly lower than the respondents from other regions. Also, the respondents from Africa and Latin America each rated 7 of the 25 items significantly higher than respondents from other regions. This suggests that the workplace well-being was supported by a range of activities, rather than a select few, and that the activities used differ by region.

Figure 7 shows several patterns regarding what is generally rated high or low in terms of activity effectiveness across the different geographic regions. Among the highest-rated activities were:

- "Going to work"
- "Focusing on positives"
- "Spending time with family/friends"
- "Exercise"
- "Eating healthy"

Table 6 | **Effectiveness of Well-being Activities by Geographic Region**

Activity	Middle East	Europe	Africa	Latin America	Australia/ New Zealand	North America	Asia	India
Watching television/movies*								
Listening to or playing music					H			L
Reading						L		H
Playing video games							H	
Shopping	H		H	H		L	H	
Watching sports*								
Focusing on positives			H	M		L		
Adjusting my expectations		L	L	H				
Considering other perspectives*								
Using stress management techniques	H	L			H			
Mindfulness techniques		L			H			
Spending time with family/ friends				H		L	L	L
Eating meals with others				H				
Attending parties				H				
Participating in online social activities					L		H	
Eating healthy	M		M	M	H		L	
Massage			L		H			
Meditation*								
Yoga			L		M	M		H
Exercise			L	M	H			
Playing sports			L	H	L	L	H	
Walking		H			H		L	H
Participating in religious activities	M	L	H	M	L	M	M	ML
Reading spiritual literature	M	L	H				M	ML
Going to work	M	L		H		L		H

Note: Sample sizes range from 3,006 to 3,113 due to missing responses. L = low (significantly lower than other regions); ML = moderately low (significantly lower than M but significantly higher than L); M = moderate (significantly lower than MH but significantly higher than ML); MH = moderately high (significantly lower than H but significantly higher than M); H = high (significantly higher than all other regions).

*No significant differences between geographic regions.

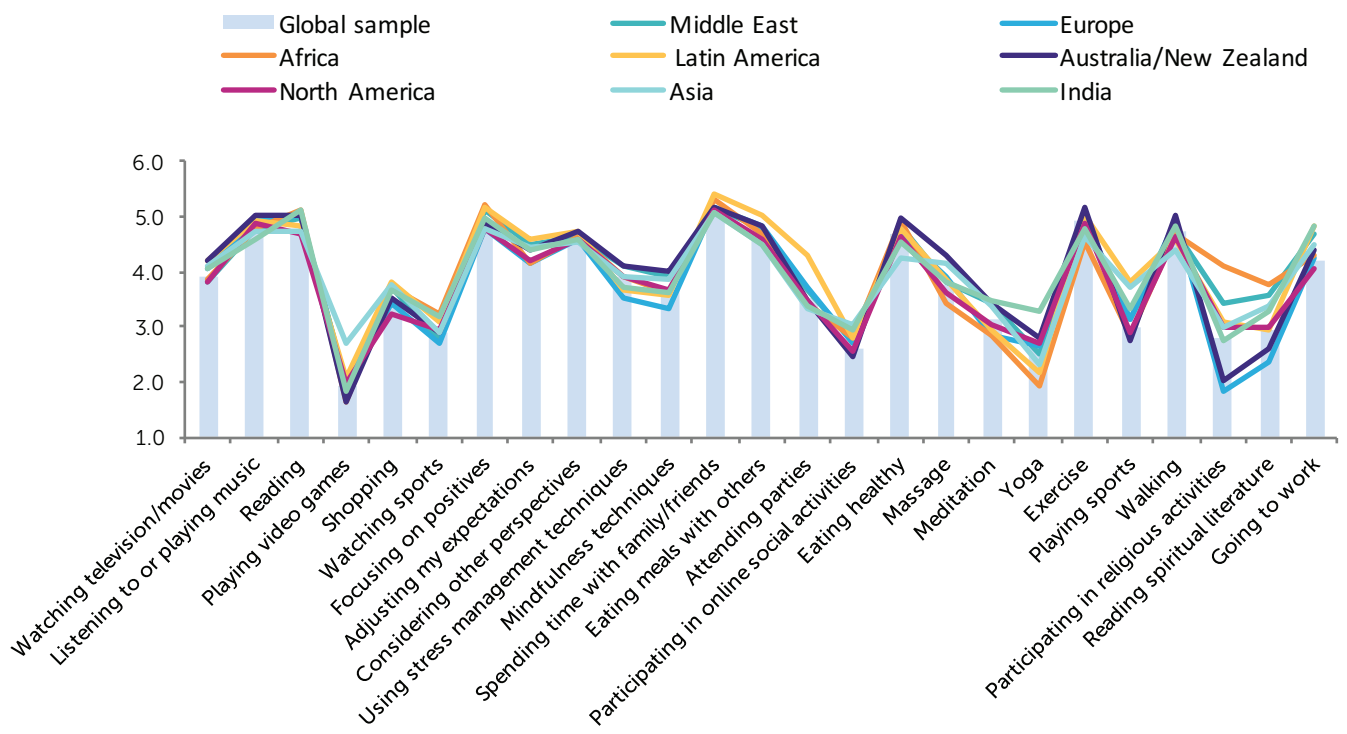

Figure 7 | **Effectiveness of Activities Supporting Well-being by Geographic Region**

Note: N = 3,113.

Among the lowest-rated activities were:

- "Playing video games"
- "Yoga"
- "Playing sports"
- "Meditation"
- "Participating in religious activities"

Taken as a whole, the results of the analysis of geographic regions and the activities that support well-being suggest that while the overall patterns are similar, in some regions respondents differ in their approaches and efficacy for supporting their well-being. This suggests that individuals and organizations in different parts of the world should consider localized approaches to supporting well-being at work.

Given the large number of statistical comparisons these items provided, an examination of the impact of the activities on well-being was also conducted. Specifically, the level of well-being, along with each of the PERMA factors, was predicted from the measures of frequency of use and effectiveness of well-being activities. The goal of these analyses was to address the following question: What activities used to support well-being are the most strongly related to overall reported workplace well-being?

Frequency of Use and Effectiveness of Well-being Activities by MBTI® Type

Personality type, measured by the MBTI instrument, was also examined for differences in the frequency of use and effectiveness of activities used by respondents to support their workplace well-being. Again, the 25 activity frequency of use and effectiveness items were analyzed with analysis of variance (ANOVA) and Tukey post hoc follow-up tests. The overall pattern of results is summarized in Table 7, which should be examined along with Figure 8.

A review of Figure 8 shows a fairly consistent pattern of responses across the different MBTI personality types for the activity frequency of use items. However, some differences between the

Table 7 | **Frequency of Use of Well-being Activities by MBTI® Type**

Activity	ISTJ	ISFJ	INFJ	INTJ	ISTP	ISFP	INFP	INTP	ESTP	ESFP	ENFP	ENTP	ESTJ	ESFJ	ENFJ	ENTJ
Watching television/movies*																
Listening to or playing music				L						H						
Reading			H			ML		MH	L							M
Playing video games					MH			H	M	ML		M		L		
Shopping					L			L		MH	ML			H		
Watching sports	ML		L		ML				H	MH	ML		ML			
Focusing on positives					L				M	H	H	ML	MH	H	H	H
Adjusting my expectations*																
Considering other perspectives	L		MH			L	ML	MH		ML	H				MH	
Using stress management techniques			H		L						M			M	M	M
Mindfulness techniques			H	M	L		M				H				M	M
Spending time with family/friends		M		L		ML		L	ML	H	H	ML	MH	MH	MH	ML
Eating meals with others	L			L				L		H	MH	ML	MH	MH	MH	
Attending parties	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H
Participating in online social activities					L				M		M			H	M	
Eating healthy					L				L		M					H
Massage				L		L					M				H	
Meditation		ML	MH	ML	L	ML	H	ML			H	ML	ML	ML	MH	MH
Yoga	L		H		L		H								H	
Exercise		L				L			M							H
Playing sports			L				L		H	ML			MH			H
Walking*																
Participating in religious activities			MH			ML		L		ML				H	MH	
Reading spiritual literature			H		L		MH				ML			MH	ML	
Going to work*																

Note: Sample sizes range from 3,006 to 3,113 due to missing responses. L = low (significantly lower than other types; ML = moderately low (significantly lower than M but significantly higher than L); M = moderate (significantly lower than MH but significantly higher than ML); MH = moderately high (significantly lower than H but significantly higher than M); H = high (significantly higher than all other types).

*No significant differences between types.

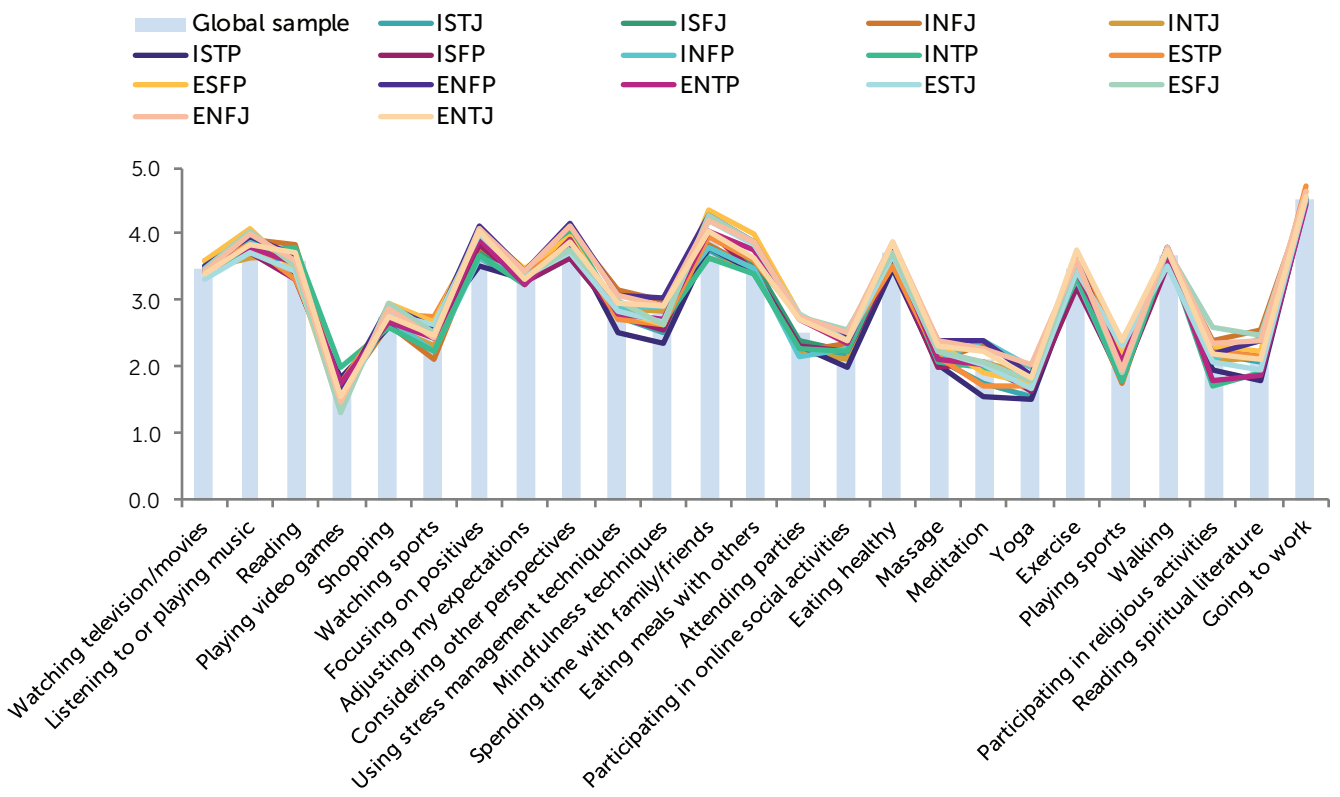

Figure 8 | **Frequency of Use of Well-being Activities by MBTI® Type**

Note: N = 3,113.

different personality types are evident for particular items, and some overall patterns are worth noting. Specifically, individuals with ISTP preferences were least likely to report "Using stress management techniques," "Mindfulness techniques," "Participating in online social activities," "Massage," "Meditation," "Yoga," and "Reading spiritual literature" to support their well-being. Individuals with ISTP preferences were among those with the lowest ratings on 10 of the 25 activities, while those with ENFP preferences were among the personality types endorsing the highest scores for six of the activities: "Focusing on positives," "Considering other perspectives," "Mindfulness techniques," "Spending time with family/friends," "Attending parties," and "Meditation."

MBTI type also played a role in effectiveness ratings for the activities used to support well-being. A review of Table 8 and Figure 9 shows that individuals with ISTP preferences provided significantly lower effectiveness ratings for several social activities (e.g., "Attending parties," "Participating in online social activities," and "Going to work") as well as more intrapersonal approaches ("Eating healthy," "Massage," "Meditation, and "Yoga") used to improve workplace well-being. Interestingly, ISTP respondents tended to rate "Playing video games" as an activity with moderate to high levels of effectiveness. This suggests that individuals in this group may use an activity that relates to aspects of their type—that is, a goal-oriented activity, such as a game, in an introverted environment. Individuals with INTP preferences were least likely to report "Participating in religious activities" to support well-being, while those with ISTP preferences were least likely to endorse "Reading spiritual literature." Both of these results appear consistent with the extraverted (participating in a group) and introverted (reading) needs of the ENTP and INTP types. Conversely, those with ESFP and ENFP preferences reported significantly higher levels of "Spending time with

Table 8 | **Effectiveness of Well-being Activities by MBTI® Type**

Activity	ISTJ	ISFJ	INFJ	INTJ	ISTP	ISFP	INFP	INTP	ESTP	ESFP	ENFP	ENTP	ESTJ	ESFJ	ENFJ	ENTJ
Watching television/movies*																
Listening to or playing music*																
Reading			H	M	L		M	M	L		MH	ML			M	MH
Playing video games	M			M	M			H	M	L		ML		L		
Shopping								L		H	MH		ML	H	MH	ML
Watching sports	H		L						H		H		H			
Focusing on positives			ML		L	ML			M	H	H	ML	M	MH	H	M
Adjusting my expectations						L					M		M		H	M
Considering other perspectives			MH		L	L	ML	ML	M		H	ML	ML			M
Using stress management techniques			M		L					M	H			M	M	M
Mindfulness techniques			MH	ML	L	ML					H	ML			ML	ML
Spending time with family/friends		ML		L				L	ML	H	H	M	H	H	H	MH
Eating meals with others				L				L	ML	H	MH	M	M	MH	M	M
Attending parties	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H
Participating in online social activities					L					M	M		H		M	M
Eating healthy			M		L		M			M	M			M	M	H
Massage					L					M	MH				H	ML
Meditation		ML	MH	ML	L	ML	H	ML			H	ML	ML	ML	MH	ML
Yoga			MH		L		MH				ML				H	
Exercise		L				L			H		H					
Playing sports		L	L				L	L	H				MH			ML
Walking					L					H						
Participating in religious activities	ML		MH			ML		L	MH	ML			MH	H		
Reading spiritual literature			H		L		H				M	L		H	H	
Going to work					L				ML	H	M		H	ML	ML	MH

Note: Sample sizes range from 3,006 to 3,113 due to missing responses. L = low (significantly lower than other types); ML = moderately low (significantly lower than M but significantly higher than L); M = moderate (significantly lower than MH but significantly higher than ML); MH = moderately high (significantly lower than H but significantly higher than M); H = high (significantly higher than all other types).

*No significant differences between types.

family/friends" to support their workplace well-being. Such an activity also aligns with the preferences for Extraversion and Feeling of these two types. Similarly, other Extraverted types (ESTJ, ESFJ, and ENFJ) also indicated that "Spending time with family/friends" supported their workplace well-being.

Overall, people with ISTP preferences were among those types reporting the lowest scores for 14 of the 25 items, while those with ENTJ preferences scored in the moderate range of effectiveness for 14 of the 25 items. People with ENFP preferences endorsed moderate effectiveness for 9 items and were among the highest-scoring types for 9 additional effectiveness items. This suggests that there are differences based on type with respect to the activities rated as effective in supporting workplace well-being, even though the differences across the types were relatively small in most cases.

Predicting Well-being. A final set of analyses was conducted to determine how strongly the activities related to the level of reported well-being. Separate analyses of the frequency of use and effectiveness of activities were conducted initially. However, the researchers wanted to examine the total set of frequency of use and effectiveness of the activity items, along with MBTI type and geographic region, simultaneously to determine what had the most impact on reported overall workplace well-being, and each of the PERMA factors.

To examine this question, a separate stepwise regression analysis was performed.[1] However, only the analysis of overall well-being is reported here, as summarized in Table 9. The table presents a summary of stepwise regression predicting overall well-being from activity frequency of use, activity effectiveness, MBTI type, and geographic region.

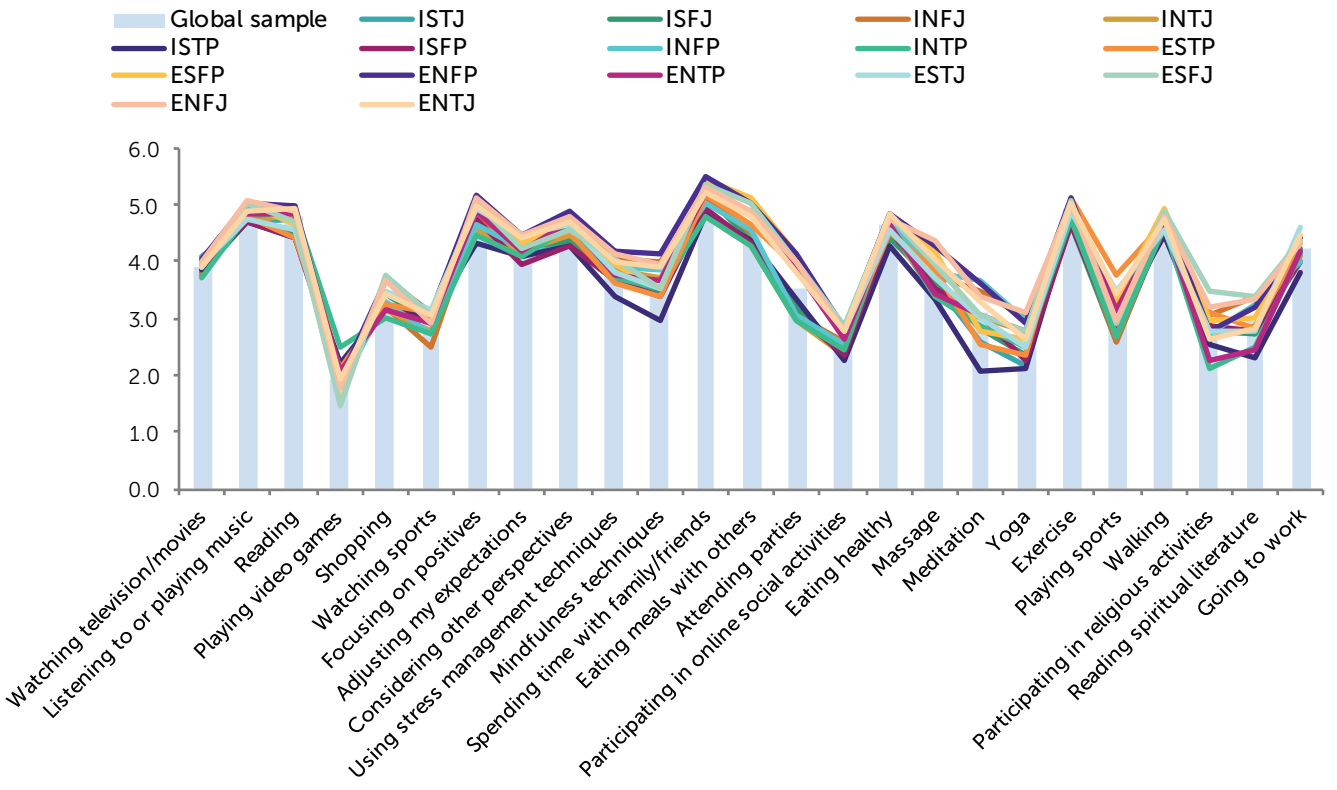

Figure 9 | **Effectiveness of Activities Supporting Well-being by MBTI® Type**

Note: N = 3,113.

Table 9 | **Statistical Summary of the Prediction of Workplace Well-being**

Activity*	*b*	Std error	Beta	*t*	Sig.	R^2 change
Going to work (effectiveness)	0.516	0.018	0.464	28.323	.000	.316
Focusing on positives (frequency)	0.280	0.033	0.185	8.437	.000	.058
Spending time with family/friends (frequency)	0.179	0.023	0.114	7.609	.000	.016
Going to work (frequency)	−0.104	0.025	−0.063	−4.193	.000	.005
MBTI type	0.018	0.004	0.064	4.355	.000	.005
Adjusting my expectations (effectiveness)	0.127	0.025	0.103	5.117	.000	.005
Adjusting my expectations (frequency)	−0.161	0.029	−0.099	−5.453	.000	.007
Shopping (frequency)	−0.091	0.023	−0.058	−3.933	.000	.002
Watching television/movies (effectiveness)	0.047	0.017	0.040	2.728	.006	.003
Reading (frequency)	0.048	0.019	0.038	2.537	.011	.002
Meditation (effectiveness)	−0.047	0.012	−0.069	−4.017	.000	.002
Massage (effectiveness)	0.029	0.011	0.043	2.784	.005	.002
Yoga (effectiveness)	0.028	0.011	0.043	2.628	.009	.001
Focusing on positives (effectiveness)	0.075	0.028	0.060	2.642	.008	.001
Eating healthy (effectiveness)	−0.081	0.021	−0.069	−3.806	.000	.001
Eating healthy (frequency)	0.098	0.026	0.065	3.725	.000	.002
Considering other perspectives (effectiveness)	0.060	0.024	0.043	2.497	.013	.001
Using stress management techniques (frequency)	−0.044	0.020	−0.035	−2.163	.031	.001

Note: Workplace well-being sample *N* = 3,113; CAGRS *N* = 22,794.

*Table includes only items that met the statistical criteria. Any item not in the table did not account for any additional variance in the prediction of workplace well-being.

The analyses demonstrated that geographic region did not enter the equation, suggesting it plays less of a role in overall well-being than the measures that did. Second, the *R*-squared change is very small after the entry of the first variable. This is a result of a large sample size, which can allow even very small effects to be statistically significant, and therefore entered into the prediction equation. These variables are all included; however, since the analysis was exploratory, the goal was to identify those factors that may have the greatest impact on well-being. A review of the table shows that for the sample as a whole, the main predictor of workplace well-being was "Going to work." Furthermore, individuals reporting this activity as being more effective also reported a higher rating of workplace well-being.

Also of note, the frequency of "Going to work" has a negative *b*-value, suggesting that this activity is employed less as well-being increases. The positive *b*-value for MBTI type is likely to reflect the result of Extraverted types reporting higher well-being than Introverted types. It is also interesting to note that for the overall sample (as suggested in the analyses

Table 10 | **Analysis Summary of Occupational Categories**

Occupational Category	*N*	Mean	*SD*	Tukey post hoc differences
Business and financial operations*	422	7.5	1.3	
Computer and mathematical occupations*	99	7.3	1.3	
Architecture and engineering*	82	7.3	1.5	
Life, physical, and social sciences*	127	7.6	1.2	
Community and social services	119	7.9	1.3	H
Education, training, and library occupations	634	7.9	1.2	H
Arts, design, entertainment, sports, and media	65	7.1	1.4	L
Healthcare support occupations*	110	7.6	1.3	
Sales and related occupations*	125	7.4	1.3	
Office and administrative support	232	7.1	1.4	L
Management	706	7.8	1.2	M

Note: N = 3,113. L = low; M = moderate; H = high.
*No significant Tukey post hoc differences between this and other occuptional categories.

reported for geographic regions above) some of the activities—such as "Meditation," "Eating healthy," and "Using stress management techniques"—appeared to have a negative impact on reported well-being. While counterintuitive, this result is likely driven by the fact that the largest part of the overall sample was from North America, and, as shown above, these approaches may not be widely adopted by respondents from this region.

Role of Occupation in Workplace Well-being

As the survey data were evaluated, it became clear that although it wasn't one of the original research questions, a key variable that could affect respondents' well-being was their occupation. As can be seen in Table 10, a majority of the respondents fall into a fairly small number of broad occupational categories. To investigate this possibility, the occupational categories that included more than 65 respondents were selected and compared for overall workplace well-being.[2,3]

The results of this analysis were significant ($F(10, 2710) = 11.09$, $p < .001$). An examination of Table 10 shows that the occupational group with the highest overall level of workplace well-being was respondents who selected "Community and social services" and "Education, training, and library occupations." In addition, respondents who selected "Arts, design, entertainment, sports, and media" and "Office and administrative support" reported the lowest levels of workplace well-being. However, even here, the overall level of reported workplace well-being was moderate to high (7 and above on a 10-point scale). This analysis shows that in addition to personality type and culture as indicated by geographic region, along with gender and age, there are further differences, albeit small, based on respondents' occupation. However, from the analysis there is no clear explanation for these differences.

DISCUSSION: ANSWERS TO KEY QUESTIONS

This study offers new insights and answers to the key questions posed about workplace well-being, personality, and culture. It also draws findings from a diverse international workplace sample.

Does the Level of Well-being People Experience at Work Differ Between Global Regions?

The study found that the majority of people participating in this study, drawn from 87 countries and 6 continents, experience positive well-being (mean overall well-being score of 7.62 on a 10-point scale) at work. After data were clustered into geographic regions, the respondents from the Latin America region reported the highest levels of well-being (mean score = 7.95), closely followed by respondents from the Australia/New Zealand region (7.93). Respondents in the Asia region (7.35) reported the lowest overall well-being. It is worth noting that these mean differences in well-being were small in magnitude; however, the differences found between the Latin America and Australia/New Zealand regions compared to the Asia region were statistically significant. Further research with a larger and more representative sample from Asian countries is needed to clarify the robustness of this finding. In addition, there were some differences between the geographic regions in the kinds of activities that people reported as enhancing or supporting their well-being, as well as geographic region differences in the effectiveness of the activities. Notably, the regions reporting the highest levels of workplace well-being, specifically Australia/New Zealand and Latin America, also reported a larger number of activities supporting their well-being when compared with other regions. This suggests that using a variety of activities may have a positive effect on workplace well-being.

The authors do not propose that the study represents a comprehensive picture of differences in the level of workplace well-being experienced in specific countries or regions. However, it does present a more diverse international sample in comparison to previous research (Ford et al., 2015; Khaw & Kern, 2014; McMahan, Ryu, & Choi, 2014). From this it is appropriate to glean useful insights on how well-being is experienced globally in the workplace. Specifically, the study indicates that participants in the Asia region reported lower levels of well-being overall in comparison to participants in the North America region. While it is acknowledged that the sample of participants in the Asia region was small relative to the population and cultural diversity of the countries comprising that region, this outcome contrasts with previous research where people in Asian countries were found to have higher levels of well-being relative to North Americans (Ford et al., 2015; McMahan, Ryu, & Choi, 2014). Furthermore, the Australia/New Zealand and Latin America regions reported very similar levels of well-being in the study despite different cultural heritage and norms in these regions. As a number of studies have investigated the potential modulating effect of culture on well-being (Diener, Oishi, & Lucas, 2003; Ford et al., 2015; Khaw & Kern, 2014), the findings from the study suggest that people from notably different cultures, such as those of Australia/New Zealand and Latin America, can have very similar levels of workplace well-being. It could therefore be argued that country culture may have less of an effect on workplace well-being than previously thought.

Does MBTI® Personality Type Influence Well-being at Work?

The findings from the study indicated differences in the level of workplace well-being between individuals of different MBTI personality types. ENFP types reported the highest well-being, while ISTPs reported the lowest well-being. Of note, the differences in level of well-being between these types were small in magnitude, and the average levels of well-being for each of the 16 MBTI types in the study fell within a "moderately high" range (i.e., scores of 7 or more on a 10-point scale). This indicates that people of all personality types can and do experience generally positive levels of well-being in the workplace.

The study also highlighted that the Relationships factor of Seligman's PERMA model of well-being (Seligman, 2011) was reported as the highest-ranking PERMA factor for the majority of MBTI types (15 out of 16). ESTJs were the only

group found to have Meaning as their highest-ranking factor, while Relationships was ranked their second highest. This finding highlights the importance and positive effect of constructive and supportive relationships in the workplace and is consistent with previous organizational research demonstrating that positive workplace relationships not only support but also enhance employee well-being (Steffens, Haslam, Schuh, Jetten, & van Dick, 2016). This is noteworthy for both employers and employees, as it reinforces the importance and benefits of fostering and maintaining relationships in the workplace that are mutually supportive, caring, and satisfying. The benefits of such relationships for employers and employees include higher levels of motivation, productivity, and income (Diener & Tay, 2012; Steffens et al., 2016). Furthermore, building and maintaining supportive relationships is an aspect of well-being in the workplace that both employers and employees can directly influence and be responsible for supporting.

A somewhat surprising finding was that the Accomplishment well-being factor ranked the lowest of the PERMA factors for all 16 MBTI types. Although the average differences between Accomplishment and the other well-being factors was modest in size, the pattern highlights that well-being for all personality types may be further enhanced by helping individuals find ways to achieve or identify how they have made progress at work to foster a sense of accomplishment. It is also possible that this finding indicates that the majority of respondents in the study view the accomplishment they experience in their current work to be at a level below what may be possible or optimal. Previous research shows that people can increase their achievement and well-being in academic and occupational settings when they are able to use their innate talents and strengths in their work (Duckworth, Peterson, Matthews, & Kelly, 2007; Seligman 2011). This finding further reinforces the importance of organizations' helping employees identify their strengths and find ways to use these strengths in the workplace (Seligman, 2011).

The analysis of well-being by MBTI preference pairs (i.e., E–I, S–N, T–F, and J–P) did, however, reveal differences in well-being between those who prefer Extraversion (E) and those who prefer Introversion (I). Overall, E types indicated higher levels of well-being than I types. This finding is consistent with previous research investigating links between a five-factor model (FFM) personality trait measure of Extraversion and well-being (Albuquerque et al., 2011). The current study also highlights that most of the E types, in comparison to the I types, reported engaging in more interpersonal activities. As the PERMA factor Relationships was predominantly the highest-rated aspect of well-being in the study, and E types endorsed interpersonal activities such as "Spending time with family/friends" or "Going to parties" more than I types, this may reflect a positive effect these social activities have on the well-being of the E type respondents. This is also supported by numerous studies that demonstrate that E types typically engage, more than I types, in activities that build and maintain relationships in the workplace (Myers, et al., 1998). In contrast, I types are likely to need to make a conscious effort to engage in similar interpersonal activities in the workplace to derive the same benefits for their well-being.

A further consideration for this finding is previous research that found that people with high levels of the FFM trait Extraversion report having more positive affective and emotional states (Albuquerque et al., 2011). A similar effect may be contributing to the differences in level of well-being found between E types (who typically report high levels of the FFM trait Extraversion) and I types in the study. Identifying underlying factors contributing to the differences observed between Extraverts and Introverts presents an area for further investigation of these personality differences using the PERMA model of well-being.

Does Personality Type Influence the Ways People Enhance Their Well-being at Work?

The findings from the current study exploring factors predicting well-being from the frequency of use and effectiveness of selected activities indicated that, overall, "Going to work" was one of the main predictors of workplace well-being. While this finding is not surprising in a study focused on workplace well-being, it highlights the influence individuals' workplace and occupation can have on their well-being. Given the amount of time most people typically spend in the workplace through the course of their life—coupled with the evidence that increasing well-being of employees correlates with increased employee health, productivity, creativity, incomes, and profitability (Diener & Tay, 2012; Fisher, 2010; Swart & Rothmann, 2012)—organizations have a clear reason to ensure that employees find optimal ways to engage in occupations and work environments that support their well-being and psychological health.

The activity "Focusing on positives" was also found to be a significant predictor of workplace well-being. This finding emphasizes the benefit of individuals fostering and maintaining a cognitive outlook that focuses on the positives of a situation. It also corresponds with previous organizational research identifying correlations between the frequency of positive statements over negative statements used in employee communications and the financial performance of organizations (Fredrickson & Losada, 2005; Seligman, 2011, 2013). A practical application of this finding in the workplace is for employers and employees to identify positive beliefs and thoughts that enhance their well-being and evaluate the validity of negative beliefs and thought patterns. This is likely to be particularly relevant when organizations are faced with situations such as restructuring or downsizing, which can be perceived by staff either positively or negatively. A tangible application of this finding is to help employees develop, when needed, a more positive outlook regarding their work and ultimately all areas of their life.

The study also revealed that personality type, measured by the MBTI instrument, did play a role in predicting well-being, driven largely by the Extraversion (E) and Introversion (I) type preferences. Given that E type respondents in the study tended to report higher levels of workplace well-being, it could be argued that an opportunity or a need to find ways to further support the well-being of I types in the workplace exists. A possible place to start is the use of strategies that show evidence of enhancing well-being irrespective of personality type preferences. Personality type theory (Jung, 1971; Myers et al., 1998) proposes that all personality types have the potential and ability to utilize cognitive strategies such as cognitive reframing or focusing on positive aspects or adjusting expectations in different situations. Given that the study indicates that these cognitive approaches are predictors of workplace well-being, employers and employees have an opportunity to learn, teach, and apply such strategies to support and potentially enhance workplace well-being, regardless of a person's underlying personality type.

What Lifestyle Activities Contribute to Workplace Well-being?

The study went beyond evaluating just the level of workplace well-being by also investigating specific activities people use to support their workplace well-being. In the study, "Going to work," "Focusing on positives," "Spending time with family/friends," "Exercise," and "Eating healthy" were reported by respondents as the most effective methods for maintaining their well-being. These are all activities people in every geographic region and of any personality type have the potential to use.

The activities in the study reported as relatively less effective for maintaining well-being were "Playing video games," "Yoga," "Playing sports," "Meditation," and "Participating in religious activities." This result contrasts with numerous recent media reports and public forums that promote these activities as supportive of physical and psychological well-being

in general. This calls into question whether the media and health educators may be overlooking or underpromoting alternative activities that may be beneficial for well-being. However, some of these activities were still reported by certain personality types as effective (e.g., ISTP respondents rated "Playing video games" as effective). It is proposed that personality preferences influence the choice of activities people use to support their well-being.

It is acknowledged that the study did not evaluate every possible activity that could support well-being; however, the activities in the study were based on items used in a previous survey evaluating stress and well-being of an Australian sample (Australian Psychological Society, 2015). The current study does, however, broaden the scope of previous research by permitting cross-country and cultural comparisons from the large, international workplace well-being sample. The analysis of the activities supporting well-being also factored in the potential effect of individuals' personality type (based on MBTI type theory) and geographic region to examine the main predictors of well-being at work. The results of these analyses demonstrate that there are activities that positively affect well-being, and also that personality type plays a role.

In sum, these findings suggest that personality type, to some extent, influences both the choice and perceived effectiveness of activities people use to enhance and support their workplace well-being. While the overall variance accounted for by additional predictors was small, the exploratory nature of these analyses indicates that further research may help further clarify specific activities that are critical for well-being, and how these may differ or be utilized by people of different personality types. This should be kept in mind when organizations are endorsing or offering employees activities to enhance their well-being. For example, employers and employees seeking strategies to support workplace well-being should consider personality preferences and also offer a range of activities to avoid relying on a "one-size-fits-all" approach. It is also likely to be helpful for individual employees to be aware of the kinds of well-being activities that have been reported as effective based on their personality type preferences.

OTHER INSIGHTS FROM THE STUDY

A further interesting and important trend identified in the workplace well-being sample is that well-being increased with the age of the respondents. This further supports the hypothesis that people develop ways to support their well-being with experience and potentially greater self-awareness of what does and doesn't work for them (Seligman, 2011). Also of interest was the finding that women in the sample tended to rate their well-being higher than did men. It is not clear from the study why this may be the case; however, female respondents represented a clear majority (67%), which may reflect a self-selection attraction to the topic of the study. It will be important to conduct further research to see whether this finding is replicated with a more balanced gender sample.

As the study also resulted in obtaining responses from more diverse occupational groups than did previous research, it permitted an opportunity to look at potential differences in well-being between occupations. Although the data demonstrated that respondents in all occupational groups surveyed generally had positive well-being scores (i.e., scores of higher than 7 on a 10-point scale on the well-being factors), respondents in the occupational groups "Community and social services," "Education and training," and "Management" reported the highest overall well-being (with scores of 7.8 and 7.9). These roles are all considered to be professional white collar or service occupations, which may be a factor influencing the well-being of people in these roles. However, more research is needed to clarify whether certain occupations or job activities enhance or inhibit well-being. The occupational findings from the study nonetheless provide a more generalizable occupational sample than most of the well-being research to date and a basis for further research.

KEY CONCLUSIONS FOR GLOBAL WORKPLACE WELL-BEING

The study demonstrates that workplace well-being can be measured using the PERMA model of well-being proposed by Seligman (2011). Further, the study supports that the present approach to measuring workplace well-being is consistent with the findings of other more general and related models of well-being, and that the well-being measure developed for the study here is a valid measure of workplace well-being. In addition, the study indicates that personality type, as measured by the MBTI instrument along with age and gender, plays a role in influencing workplace well-being. The study also demonstrates that there are activities that people use and can be used to improve their workplace well-being irrespective of their personality type or country of residence. It is acknowledged that many of the survey items in the study evaluating activities people use at work to support their well-being are likely to be used outside of work as well. An important improvement on the study would be for future research to evaluate a wider range of well-being activities, particularly those that people use in the workplace. Furthermore, organizations interested in supporting and increasing the well-being of their staff would likely be more effective if they were aware of the MBTI personality types of their staff and the specific activities most effective for supporting the well-being of a given personality type.

The study also highlights the importance of having positive and supportive relationships in the workplace for employee well-being. This is an aspect of the workplace that both individual employees and managers can directly support without extensive or expensive organizational interventions. Organizations interested in improving the well-being of their employees, across geographic regions and personality types, should also consider finding ways to increase the sense of accomplishment people have at work, as this element of well-being was consistently rated the lowest by all MBTI personality types and by respondents in all geographic regions. Using measures of progress and helping individuals and work teams identify when key targets have been achieved may support this aspect of workplace well-being.

Further, the study offers an international benchmark that permits organizations and communities to compare the well-being of their staff. Evaluating the well-being of employees on a regular basis (i.e., twice yearly or annually) enables employers to identify specific and valid strategies for fostering and supporting the well-being of their leaders and staff. While there are likely to be differences between organizations in the level of well-being reported by staff, the findings of this study present the basis for practical and specific methods to enhance well-being in a diverse range of occupational groups and workplace settings. Organizations that do not respond to lower levels of well-being in their workforce are overlooking an opportunity to improve employee health, retention, satisfaction, productivity, creativity, and profitability. Organizations that work to improve the well-being of their workers can identify approaches that help their particular workforce, focus on the PERMA factors with the lowest scores, and determine which activities will have the greatest impact on the well-being of staff. Given the growing body of evidence that positive well-being not only supports physical and psychological health of individuals but also contributes to the performance of teams, organizations, and communities, its importance can neither be underestimated nor ignored.

The study of workplace well-being with the PERMA model is in its infancy. Much is known about well-being in general, and topics such as job satisfaction, retention, and productivity have been studied from a seemingly endless number of perspectives and theories, with thousands and thousands of studies in the literature. However, as the world of work, the structure and form of organizations, and societies continue to evolve, considering more employee-centric approaches to achieving workplace well-being may be more fruitful than models, approaches, and theories that have been overcome or made less relevant by changes we have all experienced at work.

TECHNICAL APPENDIX

Provided here is information on the measurement properties of the *Global Well-being at Work Inventory*™ (GWWI™). It draws on the workplace well-being sample described above for the analyses that follow. The evaluation of the assessment demonstrates evidence of reliability of the measures, as well as several forms or measurement validity. Note that further research on the application of the assessment, and in other contexts, is needed to more fully evaluate the measurement properties of the GWWI.

Reliabilities

Internal consistency reliability estimates were computed for each of the five workplace PERMA measures, as well as the combined overall measure of workplace well-being. The results of these analyses are summarized in Table A-1. The table shows that all of the reliability estimates were in the acceptable range, indicating the measures demonstrate adequate internal consistency reliability.

Table A-1 | **Internal Consistency Reliability Estimates of the GWWI Measures**

PERMA Factor	Cronbach's Alpha
Positive Emotions	.87
Engagement	.83
Relationships	.93
Meaning	.81
Accomplishment	.81
Overall well-being	.94

Note: N = 3,113.

Descriptive Statistics

The sample means and standard deviations of the workplace well-being measures and overall workplace well-being are reported in Table A-2, which reproduces Table 2 from the main body of this paper for convenience. While not a traditional indicator of validity, the results found for the sample overall are similar to the range of reported well-being in other studies. Diener (2000) reports selected levels of life satisfaction from samples from 29 countries, each based on a representative sample of approximately one thousand respondents. The average life satisfaction value is 6.90 (on a 10-point scale similar to the one used here). While this shows that things have not changed drastically in the past 40 or so years in terms of well-being or life satisfaction, it demonstrates that the measure used here is showing a similar range of scores in a culturally diverse sample, providing some evidence for the efficacy of the measure.

Khaw and Kern (2015), comparing US and Malaysian students, found values (on a 10-point scale) for

Table A-2 | **Correlations Between PERMA Factors Measured by the Workplace Well-being Survey**

PERMA Factor	P	E	R	M	A	Overall Well-being	Mean	*SD*
Positive Emotions (P)	—	.488**	.454**	.499**	.531**	.758**	7.37	1.42
Engagement (E)	.488**	—	.454**	.792**	.657**	.850**	7.49	1.70
Relationships (R)	.454**	.454**	—	.459**	.498**	.668**	7.98	1.45
Meaning (M)	.499**	.792**	.459**	—	.689**	.903**	7.74	1.89
Accomplishment (A)	.531**	.657**	.498**	.689**	—	.758**	6.81	0.91
Overall Well-being	.758**	.850**	.668**	.903**	.758**	—	7.62	1.32

Note: Sample size ranges from 3,006 to 3,113 due to missing responses.
**Correlation is significant at the $p < 0.01$ level.

their PERMA measure that were similar to the results found here for North American and Asian respondents. In addition, they found small but statistically significant differences in well-being measured by their PERMA measure comparing US and Malaysian students. In the study, small but significant differences were also found in samples representing different regions around the globe.

Scale Intercorrelations

Table A-2 also presents the correlations among the measures in the GWWI. As noted previously, the correlations among the measures are fairly high (average r = .55), while the average correlation of the PERMA measures with the overall measure or workplace well-being is .79 in this sample. The high correlations of the PERMA factors with the overall measure are to be expected, since the items in the PERMA factors are averaged to obtain the overall measure of workplace well-being. The correlations among the PERMA factors suggest that these concepts are related, which accords with the findings from measures of general PERMA assessments. For example, Khaw and Kern (2015) found an average correlation among the PERMA factors in their measure of .52, and the average correlation of the subscales with an overall measure of PERMA of .78. Similarly, in a study of a similar model, Kern, Waters, Adler, and White (2015) reported an average correlation of .58 among four of the five PERMA factors (Meaning was not measured). The results of these two studies replicate, almost identically, what is found for the GWWI scale intercorrelations. These findings are consistent with what is to be expected from the PERMA model, which assumes that the overall markers of well-being are related (Seligman, 2011). For example, it is difficult to imagine a workplace where employees have very poor relationships with others and high positive emotions. In short, the indicators of well-being are likely to move in the same direction as the well-being of the respondent is affected at work. As such, correlations of the magnitude found here are to be expected.

Factor Structure

Construct validity is the degree to which an assessment measures the concept that it claims to measure (Cronbach & Meehl, 1955) and is often demonstrated through a statistical technique called *factor analysis* (Thompson & Daniel, 1996). Factor analysis demonstrates how the items work together to measure identifiable concepts or constructs. In an ideal scenario, the items intended to measure a particular factor, concept, or construct will correlate with or load on their intended factor, and have smaller or nearly zero correlations or loadings on other factors created by other sets of items in the overall assessment being administered. Here, 28 items composing the GWWI were subjected to a principle components factor analysis using a varimax rotation. The varimax rotation tries to weight the items into factors that are independent (or orthogonal), meaning they have low or no correlation among the resulting factors.

Two different analyses were run, and the results were largely identical, so only one is reported here. First, the 28 items were analyzed with a requirement to have a five-factor solution identified. Second, the requirement for a set number of extracted factors was removed, and no a priori restrictions were imposed on the number of factors. In this analysis, five factors were again extracted largely reproducing the initial analysis, and are summarized in Table A-3.

Loadings for items are highlighted, and, as can be seen in the table, several of the proposed factors are reproduced from the items, but not all. First, note that the items measuring emotions included four positively worded items and four negatively worded items (reversed for scoring). These items loaded on separate factors, reflecting positive and negative emotions, similar to the model used by Khaw and Kern (2015). In addition, the Engagement and Meaning factors loaded largely on the same factor, and are also highly correlated. However, as noted elsewhere, it is difficult to imagine work that is engaging but not meaningful. The Relationships and Accomplishment measures functioned largely

Table A-3 | **Rotated Component Matrix of Items in the GWWI**

Survey Item	P	E	R	M	A
Anxious	.11	.06	.07	.73	.05
Depressed	.15	.12	.24	.75	.09
Dejected	.17	.15	.17	.74	.12
Pessimistic	.21	.08	.27	.67	.07
Happiness	.19	.23	.69	.32	.10
Satisfied	.28	.13	.70	.29	.14
Content	.21	.16	.68	.31	.10
Optimistic	.23	.18	.66	.36	.10
Most things I do at work are boring and not enjoyable (reversed)	.67	.10	–.05	.29	.04
I have opportunities to use my talents and strengths at work	.76	.22	.22	.11	.01
I often lose track of time when working on something important or enjoyable in my job	.31	.03	.37	–.18	–.05
I have opportunities to do work that interests me	.81	.19	.23	.10	.02
I get pleasantly absorbed in what I am doing at work	.77	.16	.30	.08	.07
Most of what I do at work is trivial and unimportant (reversed)	.72	.13	–.09	.29	.12
My work is meaningful and worthwhile	.85	.16	.18	.13	.04
I feel a sense of purpose from my work	.85	.16	.21	.14	.08
My work contributes to outcomes that are important for me and others	.80	.16	.17	.10	.09
I am inspired by what I do at work	.86	.17	.20	.09	.06
I do not accomplish most of the things I need to at work (reversed)	.00	.06	–.07	.22	.79
I achieve what I set out to do in my job	.27	.17	.31	.03	.73
I feel a sense of achievement from what I do at work	.73	.19	.29	.10	.34
Most of the time I feel motivated by what I achieve at work	.74	.19	.26	.10	.26
I make progress in my work	.51	.23	.29	.05	.53
There is little opportunity for me to establish meaningful relationships with others at work (reversed)	.14	.63	–.12	.25	.04
I help and support the people I work with	.16	.55	.27	.00	.28
People help and support me at work	.27	.69	.18	.06	.08
The relationships I have with co-workers is a positive aspect of my job	.17	.86	.17	.09	.04
My work relationships are rewarding for me and others	.28	.80	.20	.09	.05

Note: N = 3,113. Extraction method: principal component analysis. Rotation method: varimax with Kaiser normalization; a rotation converged in 7 iterations.

as intended, loading on clean unidimensional factors. Overall, the factor analytic results are mixed, providing some initial evidence of underlying construct validity. However, given the similar results found in prior research, the factor structure produced here is largely consistent with what was expected.

NOTES

1. Stepwise regression identifies the strongest predictor or correlate from a set of predictor variables for a specific dependent or outcome variable. Then, the next-strongest predictor is identified, and the model is retested. The process continues until the entire set of predictors is exhausted, or, adding the next-strongest predictor results in a non-significant relationship with the outcome variable.
2. Similar analyses were run for each of the workplace well-being PERMA factors, but the pattern of results was largely consistent, so only the overall well-being analysis is reported here.
3. Overall ANOVA results revealed statistically significant differences for each of the PERMA factors, as well as overall workplace well-being. However, the Tukey post hoc analyses indicated that no discernable difference was found for the measures of Relationships or Accomplishment. When there were significant differences, respondents in the "Arts, design, entertainment, sports, and media" and "Office and administrative support" occupations were consistently the lowest scoring, while respondents in the "Community and social services" and "Education, training, and library occupations" categories were consistently the highest scoring.

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Martin Boult has worked as a psychologist in the field of management and organizational development since 1998, with a particular focus on mid-level to executive leadership development, strategic planning, team performance, and talent development. He began his career as a clinical neuropsychologist before transitioning to organizational psychology and consulting. He is responsible for overseeing the international certification programs for CPP's range of psychometric instruments, including the *Myers-Briggs Type Indicator* (MBTI) assessment. He is a faculty facilitator with the Center for Creative Leadership, China European International Business School, and the Moscow School of Management. He provides consulting to leading public and private sector organizations in Australia, China, India, Malaysia, New Zealand, Russia, Singapore, South Africa, Thailand, UAE, and the United States. Martin is constantly seeking ways to improve the lives of his clients by integrating his experience of working across diverse cultures and drawing from his professional background in the fields of neuropsychology, leadership, and employee development.

Richard C. Thompson, PhD

Senior Director, Research, CPP, Inc.

Rich Thompson joined CPP, Inc., in 2000, and since 2006 has served as director of research, managing CPP's Research team, leading the company's research efforts in the United States and worldwide, and providing strategic input on cross-functional product development efforts. During his tenure at CPP, Rich has designed and developed CPP's Research website, which has been used in many major corporate initiatives, including the *Strong Interest Inventory®* assessment revision; played a major role in the rollout of Professional Services, CPP's consulting division; and authored multiple in-house surveys for customers. He represents CPP at major conferences, including SIOP, APA, ASTD, and SHRM.

Nancy A. Schaubhut

Senior Research Associate, CPP, Inc.

Nancy Schaubhut in 2002 joined CPP, Inc., where she conducts product-related research and assessment development. Nancy is an author or co-author of numerous CPP publications, including technical briefs, manuals, and a series of three MBTI® Type Tables books. She has presented research at conferences such as SIOP and APA, and is published in the *International Journal of Conflict Management.*

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