

PERMA+4 Building Blocks of Well-being: A Mixed-Methods Exploration of Mechanisms &
Conditions that Enable the Subjective Well-being of Workers

By

Victoria Cabrera

Claremont Graduate University

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Approval of the Dissertation Committee

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Victoria Cabrera as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Psychology.

Dr. Stewart I. Donaldson, Chair

Claremont Graduate University

Distinguished University Professor

Dr. Cindi Gilliland

Claremont Graduate University

Professor of Practice in Organizational Psychology

Dr. Stephen W. Gilliland

Claremont Graduate University

University Professor

Dr. Dianne Vella-Brodrick

The University of Melbourne

Gerry Higgins Chair in Positive Psychology and Director, Centre for Wellbeing Science

Abstract

PERMA+4 Building Blocks of Well-being: A Mixed-Methods Exploration of Mechanisms & Conditions that Enable the Subjective Well-being of Workers

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In recent years, there has been a growing awareness of the challenges many workers face regarding their well-being. Workers continue to report high levels of work-related stress and burnout and the impacts of the COVID-19 pandemic heightened the importance of this issue as declines in well-being were observed on a global scale. In 2022, the issue of worker well-being was brought to the forefront of public awareness when the U.S. Surgeon General raised the well-being and mental health of workers as an urgent public health priority. The critical need to better support worker well-being is further supported by research that shows improving well-being leads to better work performance.

Research has also demonstrated that worker well-being can be improved using positive psychology interventions. The PERMA+4 building blocks of well-being (positive emotions, engagement, positive relationships, meaning, accomplishment, physical health, mindset, environment, and economic security) are nine antecedents of well-being that provide a useful framework for designing workplace practices and interventions to better support and improve worker well-being. This dissertation aims to build on previous research on PERMA and PERMA+4 as cross-sectional predictors of subjective well-being (SWB) and contribute to a better understanding of how the PERMA+4 building blocks affects the life satisfaction and job satisfaction of full-time workers. Using an exploratory sequential mixed-methods design, I

investigated: (1) which PERMA+4 building blocks contribute the most to SWB, (2) the relationships among the PERMA+4 building blocks, (3) if there are work conditions that better enable PERMA+4 to improve SWB, and (4) whether PERMA+4 is predictive of SWB across a two-week period.

Study 1 used a qualitative phenomenological approach that consisted of semi-structured interviews with 24 full-time workers. The data were analyzed using reflexive thematic analysis to identify themes that provided insights into how full-time workers perceived and experienced the PERMA+4 building blocks at work and in their lives and how they related to their life satisfaction and job satisfaction. The building blocks that were most frequently cited as most important for life satisfaction were positive emotions, physical health, and economic security. The building blocks that were most frequently cited as most important for job satisfaction were engagement, meaning, and accomplishment. Workers also talked about specific relationships among the building blocks. Positive emotions were viewed as an outcome of positive relationships, meaning, accomplishment, economic security, and environment. Accomplishment was also viewed as an outcome of engagement, positive relationships, and physical health. Finally, having work-life balance was viewed as an enabling condition for PERMA+4 to improve both life satisfaction and job satisfaction, and having a supportive supervisor was viewed as an enabling work condition for PERMA+4 to enhance job satisfaction. These findings were then tested quantitatively as hypotheses in Study 2.

Study 2 used a two-wave panel design with a two-week lag and a sample of full-time workers who completed self-report surveys via Prolific ($N = 406$). A confirmatory factor analysis confirmed a nine-factor structure for PERMA+4 and measurement invariance testing confirmed that this structure was stable across time, gender, and race/ethnicity. Although not all hypotheses

were supported, cross-lagged panel modeling (path analysis) results demonstrated that PERMA+4 significantly predicted life satisfaction and job satisfaction two weeks later. Among the individual building blocks, positive emotions and meaning were significant predictors of job satisfaction and positive emotions were a significant predictor of life satisfaction among women. Positive relationships were also found to be a significant predictor of positive emotions, but work-life balance and perceived supervisor support did not moderate the positive relationship between overall PERMA+4 and life satisfaction or job satisfaction.

Overall, the findings of this research contribute to a more nuanced understanding of how PERMA+4 improves well-being. Study 1 findings provide rich qualitative insights into how workers perceive and experience the PERMA+4 building blocks in relation to their well-being. Study 2 went beyond a cross-sectional research design to minimize common method bias and provide evidence of directional relationships between PERMA+4 and SWB, the building blocks that contribute most to SWB, and relationships among the building blocks. Future research can further investigate these qualitative and correlational findings with more longitudinal and experimental research methods using additional samples across industries and cultures. The results of this research also have important practical implications that address the challenges workers face when it comes to their well-being. Organizations and workers can use these findings to inform the design of more targeted workplace practices and positive psychology interventions that better support and improve worker well-being.

Dedication

There are several people I would like to dedicate this dissertation to as an expression of my deepest gratitude. To Ruben Chaumont and Dr. Alejandro Adler, thank you for introducing me to positive psychology in the Philippines and inspiring my mid-career transition to pursue a Ph.D., which profoundly transformed my career and life trajectory for the better. To my parents, thank you for your unconditional love and support and for providing me with the opportunity and freedom to live my calling. To my husband, Larry, thank you for your loving support and encouragement throughout my PhD journey and for always believing in me. And finally, this dissertation is also dedicated to the memory of my dear friend, Jim Ward, who was a living embodiment of positive psychology and who continues to inspire me to flourish and help others flourish.

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Chapter 1: Introduction & Research Questions

In recent years, there has been a growing awareness of the importance of well-being, which can be a challenge for workers. The Job Demands-Resources Model (JD-R) describes how high work demands and inadequate work resources can lead to stress and burnout among workers (Demerouti et al., 2001). According to the American Psychological Association, a 2021 survey of 1,501 American workers reported that 59% experienced negative impacts from work-related stress, including symptoms of burnout in the previous month. In addition, the challenges surrounding the COVID-19 pandemic have exacerbated the issue of workplace well-being by contributing to declines in well-being worldwide (Panchal et al., 2020). Given these challenges, the U.S. Surgeon General has raised well-being and mental health among workers as an important public health priority that organizational leaders need to prioritize (Office of the U.S. Surgeon General, 2022). The positive impacts of supporting well-being at work have been demonstrated in the psychological research literature. Research has shown that higher levels of well-being lead to positive functioning at work (Diener et al., 2017) and better work performance (Lester et al., 2022; Moscoso & Salgado, 2021).

Subjective Well-being

Although there are multiple conceptualizations of the construct of well-being in the psychological research literature (Jayawickreme et al., 2012), one prevalent operationalization of well-being is Subjective Well-being (SWB), which has been measured and researched across a variety of disciplines and cultures (Diener, 2017) and has a strong evidence base of thousands of studies (Diener et al. 2018). SWB is multi-dimensional with two components: a cognitive component based on feelings of overall life satisfaction and an affective component characterized by experiencing higher levels of positive affect and lower levels of negative affect

(Diener, 1984; Diener et al., 2017). SWB can also be domain-specific based on evaluating aspects of one's life in different domains. Domain-specific SWB in work settings has been measured as job satisfaction and the balance of positive and negative affect at work (Diener et al., 2017; Neumeier et al., 2017). SWB is considered the best universal measure of well-being because it's based on an individual's subjective evaluation of their life and experience, allowing people to weigh criteria based on their goals and values. This gives SWB an advantage over eudaimonic approaches to measuring well-being, which attempt to use objective criteria to define well-being but can be value-laden (Diener et al., 2018). In addition, in 2018, Seligman evolved the PERMA model from a eudaimonic definition of well-being to describing antecedents of well-being, which laid the theoretical basis for PERMA+4 as a framework that describes antecedents of SWB. Therefore, SWB will be used to define well-being in this dissertation.

Since SWB has multiple dimensions that are distinct from one another, the cognitive component (life satisfaction) and affective components (positive affect and negative affect) may have both overlapping and differential effects on outcomes (Diener et al., 2017). For example, research has found larger differences between men and women for affective SWB than for life satisfaction (Geerling & Diener, 2017; Diener et al., 2018). In addition, the PERMA+4 building block of positive emotions overlaps with positive affect. Therefore, this dissertation will focus on the cognitive SWB of workers in both their life and work domains to understand how PERMA+4 contributes to the outcomes of life satisfaction and job satisfaction.

Research on SWB has established its importance for workers. SWB has been demonstrated to lead to a variety of positive outcomes and positive functioning in life and at work (Diener et al., 2017). Although some of one's well-being is considered dispositional (Diener et al., 2018), SWB can be increased through intentional actions and one's environment

(Lyubomirsky et al., 2005). A better understanding of the antecedents of SWB will provide critical insights into how the well-being of workers can be improved through workplace practices and interventions.

The PERMA Building Blocks of Well-being

The PERMA model was initially proposed by Martin Seligman in 2011 as a definition of well-being based on positive psychology. He later evolved PERMA from a well-being theory into a framework that describes five antecedents that contribute to SWB and can be targeted in well-being interventions. PERMA is an acronym that represents positive emotions, engagement, relationships, meaning, and accomplishment as the major building blocks of well-being (Seligman, 2018). Positive emotions are positive feelings such as gratitude. Engagement involves entirely using one's skills, strengths, and attention while working on a challenging task (Seligman, 2011), which creates the experience of flow, a state of intense focus, engagement, and absorption in a task (Csikszentmihalyi, 1975). Having positive relationships involves feeling valued and supported by other people (Seligman, 2011) and meaning is having a sense of purpose and life direction. Finally, accomplishment is experiencing mastery and achievement (Seligman, 2011).

Having higher levels of each PERMA element has been demonstrated in a number of studies to predict SWB (Cabrera & Donaldson, 2024). In workplace settings, PERMA has also been highly researched, where it has been established as a predictor of the life satisfaction and job satisfaction of employees (Kern et al., 2014;) and it has been applied to the design of effective interventions for the workplace (Donaldson et al., 2019; Neumeier et al., 2017). However, Seligman (2018) has stated that PERMA is not a complete framework and has encouraged more research to identify additional building blocks.

The PERMA+4 Building Blocks of Well-being

Donaldson and Donaldson (2020) later proposed adding four new building blocks of well-being to the PERMA model to create a more all-encompassing framework that describes all the antecedents of well-being that are especially relevant to the work context: physical health, mindset, environment, and economic security. Physical health is having health assets that are biological, functional, and psychological. Mindset is having a positive mindset that looks to the future, perseveres, and is characterized by a growth mindset. Environment is having a physical work environment with the ability to experience nature and the presence of natural light and physical safety. Finally, economic security is believing one has the financial security to meet one's needs (Donaldson & Donaldson, 2020).

A recent systematic review of the peer-reviewed empirical literature on PERMA and PERMA+4 found that empirical evidence supports PERMA+4 as a strong predictor of well-being (Cabrera & Donaldson, 2024). In previous research, PERMA+4 has been found to be a positive predictor of SWB with medium to large effect sizes, and it has also been found to be a stronger predictor of SWB when compared to PERMA (Cabrera & Donaldson, 2024; Donaldson & Donaldson, 2020; Donaldson et al., 2021). PERMA+4 has also been shown to be a negatively associated predictor of job stress and positively associated with positive functioning at work, including organizational citizenship behavior and work performance (Donaldson & Donaldson, 2020).

This dissertation aims to build on previous research that has established PERMA+4 as a predictor of well-being. This research aims to contribute to a more detailed understanding of how each of the PERMA+4 building blocks contributes to well-being to better inform the design of

practices and positive psychology interventions for the workplace to better support worker well-being. The current studies aim to answer the following research questions:

Research Question 1: Which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers?

Research Question 2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve the well-being of workers?

Research Question 3: Are there moderators or enablers that help the PERMA+4 building blocks improve well-being for workers?

Research Question 4: Does PERMA+4 predict improved well-being for workers over time?

This is one of the first mixed-methods research aimed at better understanding the PERMA+4 building blocks and how they contribute to well-being. It is also one of the first research studies aimed at understanding the PERMA+4 building blocks using a qualitative phenomenological approach and quantitative investigation that goes beyond cross-sectional research to provide evidence of a directional relationship of PERMA+4 as a predictor of well-being over time. First, I will provide an overview of the research literature on the PERMA+4 building blocks of well-being that are relevant to the research questions. Then, I will describe two research studies that used an explanatory sequential mixed methods design. Study 1 was a phenomenological study that aimed to answer Research Questions 1 through 3 by collecting qualitative interview data about workers' perspectives and lived experiences. The findings of Study 1 and Research Question 4 were then tested quantitatively in Study 2 to make the findings more generalizable to full-time workers using a panel design with a two-week lag and cross-lagged panel model path analyses. Finally, I will discuss the theoretical and practical

implications of the dissertation results, the strengths and limitations of the research design, and recommendations for future directions.

Chapter 2: Literature Review

The literature review was conducted in two phases. First, I conducted a systematic literature review of the empirical research on PERMA and PERMA+4 to determine what peer-reviewed empirical research has been conducted that answers the research questions. Next, I conducted a literature review focused on relevant theories and existing research on each of the PERMA+4 building blocks and how they contribute to SWB.

Part 1. A Systematic Literature Review of the Empirical Literature on PERMA and PERMA+4

This systematic review used 102 empirical articles compiled by Cabrera and Donaldson (2024), in which PERMA and PERMA+4 were measured quantitatively and researched as predictors of SWB between 2011 and September 13, 2022. In addition, Cabrera and Donaldson's (2024) systematic review article on the PERMA and PERMA+4 literature was included, for a total of 103 research articles that informed this literature review.

Data Extraction & Analyses

The 103 articles were reviewed using qualitative content analysis to identify previous research that answers the research questions. For Research Question 1, six research articles were identified where significant correlations of each PERMA+4 building block with life satisfaction were extracted from eight samples used in these studies from Cabrera and Donaldson's (2024) systematic review article for further analyses. In addition, one article (Dreer, 2021) looked at PERMA as a predictor of job satisfaction. For Research Question 2, 16 research articles were

identified and data relevant to the research question were reviewed using qualitative content analysis. No previous research was identified that answered Research Questions 3 and 4.

To answer Research Question 1 with a focus on the outcome of life satisfaction, meta-analytic analyses were also conducted. First, a meta-analysis of the extracted correlation data was performed with R software using the metacor package (Laliberté, 2019) to determine which PERMA+4 building blocks had the strongest positive relationship with life satisfaction across the studies. For the meta-analysis, a random effects model was used along with Fisher's z transformation of correlations to test the difference between r values, and restricted maximum likelihood (REML) was used to estimate the between-study variance. Next, a one-stage meta-analytic structural equation modeling (MASEM) was conducted using the webMASEM shiny app (Jak et al., 2021) to meta-analytically test a prediction model with each PERMA building block as predictor variables and life satisfaction as the outcome variable across previous studies. The additional four building blocks were not included in this analysis due to a small number of PERMA+4 studies in this sample. To conduct the MASEM, I first created a meta-analyzed correlation matrix of averaged correlations for each variable from correlation data. The webMASEM software then conducted one-stage MASEM, a random-effects technique, to test the model based on the averaged correlation data (Jak et al., 2021).

Results

The Strongest PERMA+4 Predictors of Life Satisfaction. Table 1 provides a summary of the correlation data from six research articles (Butler & Kern, 2016; de Carvalho et al., 2021; Donaldson & Donaldson, 2020; Donaldson et al., 2021; Goodman et al., 2018; Kern et al., 2014), in which each PERMA+4 building block was significantly correlated with life satisfaction, with mostly moderate to strong correlations.

Table 1*Correlations Between PERMA+4 Building Blocks and Life Satisfaction*

Building Block	Correlation Size	r	N	Study
Positive Emotions	Strong	.76	2,098	Butler & Kern (2016) (samples 4-11)
		.75	517	Goodman et al. (2018)
		.71	212	Donaldson et al. (2021) (self-report)
		.66	1,276	de Carvalho et al. (2021)
		.65	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.62	230	Donaldson & Donaldson (2020)
		.59	212	Donaldson et al. (2021) (co-worker report)
	Moderate	.42	147	Kern et al. (2014)
	Strong	.67	212	Donaldson et al. (2021) (self-report)
		.66	212	Donaldson et al. (2021) (co-worker report)
		.53	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.51	2,098	Butler & Kern (2016) (samples 4-11)
Engagement	Moderate	.44	1,276	de Carvalho et al. (2021)
		.38	517	Goodman et al (2018)
		.38	230	Donaldson & Donaldson (2020)
	Strong	.33	147	Kern et al. (2014)
		.68	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.67	517	Goodman et al (2018)
Relationships	Strong	.66	212	Donaldson et al. (2021) (self-report)
		.65	2,098	Butler & Kern (2016) (samples 4-11)
		.58	1,276	de Carvalho et al. (2021)
	Moderate	.54	212	Donaldson et al. (2021) (co-worker report)

		.51	230	Donaldson & Donaldson (2020)
	Weak	.20	147	Kern et al. (2014)
Meaning	Strong	.73	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.69	517	Goodman et al (2018)
		.68	2,098	Butler & Kern (2016) (samples 4-11)
		.64	1,276	de Carvalho et al. (2021)
		.59	212	Donaldson et al. (2021) (self-report)
		.59	147	Kern et al. (2014)
Accomplishment	Moderate	.48	212	Donaldson et al. (2021) (co-worker report)
		.48	230	Donaldson & Donaldson (2020)
		.69	212	Donaldson et al. (2021) (self-report)
		.66	517	Goodman et al (2018)
		.65	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.64	2,098	Butler & Kern (2016) (samples 4-11)
Physical Health	Strong	.62	1,276	de Carvalho et al. (2021)
		.58	212	Donaldson et al. (2021) (co-worker report)
		.52	230	Donaldson & Donaldson (2020)
		.51	147	Kern et al. (2014)
		.76	212	Donaldson et al. (2021) (self-report)
		.59	230	Donaldson & Donaldson (2020)
Economic Security	Moderate	.57	212	Donaldson et al. (2021) (co-worker report)
		.44	2,098	Butler & Kern (2016) (samples 4-11)
		.43	6,830	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)
		.43	1,276	de Carvalho et al. (2021)
		.65	230	Donaldson & Donaldson (2020)
		.59	220	Donaldson et al. (2021) (self-report)

	Moderate	.45	220	Donaldson et al. (2021) (co-worker report)
Work Environment	Strong	.63	220	Donaldson et al. (2021) (self-report)
		.51	230	Donaldson & Donaldson (2020)
		.49	220	Donaldson et al. (2021) (co-worker report)
Mindset	Strong	.66	220	Donaldson et al. (2021) (self-report)
		.62	230	Donaldson & Donaldson (2020)
		.54	220	Donaldson et al. (2021) (co-worker report)

Note. Correlation data extracted from Cabrera & Donaldson (2024)

Next, using this correlation data, I looked at which building blocks were the most strongly correlated to life satisfaction relative to each other within the same sample to get a sense of which building blocks emerged as the strongest predictors among PERMA and PERMA+4 (see Tables 2 and 3). In all six research articles (eight study samples total), positive emotions was one of the top three building blocks most strongly correlated with life satisfaction. Positive emotions was also the strongest predictor in most of the studies (four studies), followed by meaning (two studies), engagement (one study) and economic security (one study). In studies focused on PERMA+4, economic security and positive emotions were the strongest predictors of life satisfaction.

Table 2

Top 3 PERMA Building Blocks Most Strongly Correlated with Life Satisfaction

Top 3 PERMA Building Blocks	Sample	Study
1. Positive Emotions 2. Meaning 3. Positive Relationships	517 MTurk adults	Goodman et al. (2018)
1. Meaning 2. Positive Relationships 3. Accomplishment/Positive Emotions	6,830 international adults	Butler & Kern (2016) (samples 1a, 1b, 2, and 3)

1. Positive Emotions 2. Meaning 3. Positive Relationships	2,098 international adults	Butler & Kern (2016) (samples 4-11)
1. Positive Emotions 2. Meaning 3. Accomplishment	1,276 Brazilian Adults	de Carvalho et al. (2021)
1. Meaning 2. Accomplishment 3. Positive Emotions	147 school employees in Australia	Kern et al. (2014)

Table 3

Top 3 PERMA+4 Building Blocks Most Strongly Correlated with Life Satisfaction

Top 3 PERMA+4 Building Blocks	Sample	Study
1. Economic Security 2. Positive Emotions 3. Physical Health	230 MTurk Adults	Donaldson & Donaldson (2020)
1. Positive Emotions 2. Accomplishment 3. Engagement	212 US Coworker Pairs	Donaldson et al. (2021) (self-report)
1. Engagement 2. Mindset 3. Positive emotions	212 US Coworker Pairs	Donaldson et al. (2021) (coworker report)

Next, I conducted a meta-analysis using the correlation data from the six studies to determine which PERMA+4 building blocks had the strongest positive relationship with life satisfaction across studies. The results are summarized in Table 4 in order of magnitude of the relationship. As shown, the effect sizes for each building block were large. The three building blocks with the largest effect sizes were positive emotions ($r = .66$), meaning ($r = .62$), and accomplishment ($r = .62$). However, the differences between the effect sizes for these building blocks were small with an overlap in confidence intervals so the order of magnitude may not be meaningful. It should also be noted that this meta-analysis had limitations where the sample size

was small, especially for the PERMA+4 building blocks of work environment, mindset, and economic security. The estimates of between-study variability and uncertainty were also high. Publication bias was also assessed using just one method due to the small sample size: a linear regression test of funnel plot asymmetry (Egger et al., 1997). The test was significant for relationships ($p < .05$), meaning ($p < .01$), and physical health ($p < .05$), which indicates that publication bias may also have contributed to some of the meta-analysis results.

Table 4

Meta-analysis Effect Sizes for each PERMA+4 Building Block with Life Satisfaction

Building Block	k	N	r	95% CI		τ^2	95% CI		I ²	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
Positive Emotions	8	11,522	.66	.59	.72	.03	.01	.13	94%	91%	96%
Meaning	8	11,522	.62	.56	.68	.02	.01	.09	94%	90%	96%
Accomplishment	8	11,522	.62	.59	.65	.004	.0006	.04	66%	28%	84%
Mindset	3	654	.61	.53	.67	.005	.0000	.36	50%	0%	86%
Economic Security	3	654	.57	.45	.67	.02	.001	.86	79%	32%	93%
Work Environment	3	654	.55	.45	.63	.008	.0000	.49	62%	0%	89%
Physical Health	6	11,522	.54	.42	.65	.04	.01	.26	93%	88%	96%
Engagement	8	11,522	.50	.41	.58	.03	.01	.13	89%	82%	94%
Relationships	8	11,522	.58	.48	.66	.04	.01	.17	93%	89%	96%

Among the six research articles, only one study (Kern et al., 2014) went beyond correlational analyses to conduct a multiple regression analysis with life satisfaction as the outcome variable and a prediction model that included each element of PERMA (plus negative emotion and gender). Although the model was a significant predictor, only meaning and negative emotions contributed significant variance to the outcome. To meta-analytically test which

PERMA building blocks contribute to life satisfaction when they are included in the same model across studies, I conducted meta-analytic structural equation modeling (MASEM). I first created a pooled correlation matrix of the PERMA variables (see Table 5).

Table 5

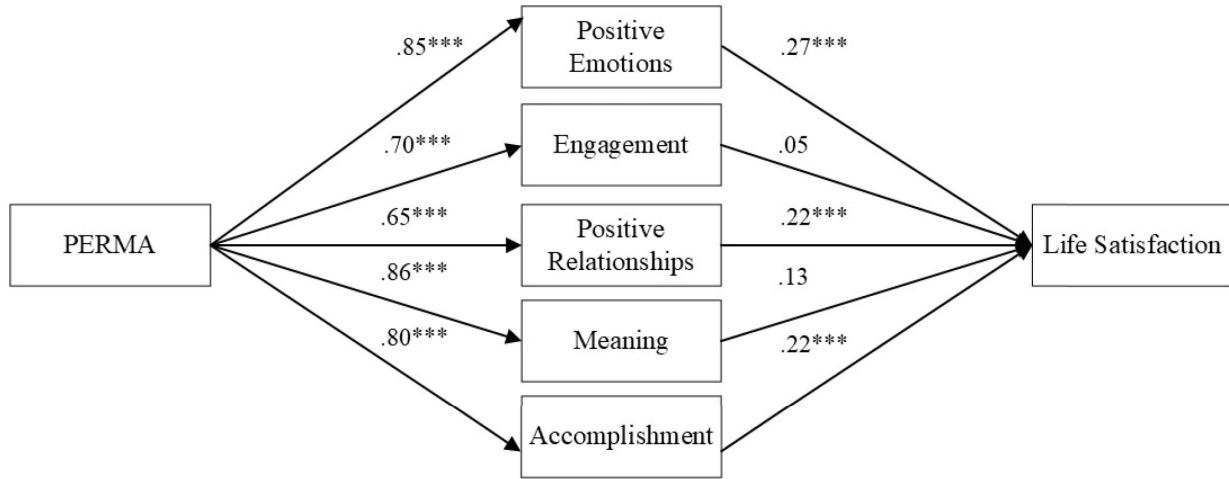
Meta-analytic Correlations Matrix for the PERMA Building Blocks and Life Satisfaction

Variable	1	2	3	4	5
1. Positive Emotions					
2. Engagement	.60				
(<i>k,N</i>)	(6,41677)				
3. Relationships	.61	.43			
(<i>k,N</i>)	(6,41672)	(6,41672)			
4. Meaning	.73	.59	.56		
(<i>k,N</i>)	(7,73614)	(6, 41649)	(6,41649)		
5. Accomplishment	.67	.58	.53	.69	
(<i>k,N</i>)	(7,73645)	(6,41,680)	(7,73620)	(6,41680)	
6. Life satisfaction	.67	.51	.58	.63	.64
(<i>k,N</i>)	(8,11522)	(8,11,522)	(8,11522)	(8,11522)	(8,41389)

The pooled correlation matrix was then used to test a model with the PERMA building blocks as predictor variables and life satisfaction as the outcome variable, but this model did not converge in webMASEM, which could be due to the model not matching the data structure or the presence of missing data in some studies (Jak et al., 2021). Next, I tested an alternative model with each PERMA building block predicting life satisfaction and included one higher-order factor representing overall PERMA. This model converged and demonstrated good fit ($\chi^2(5) = 4.03, p = 0.55$), RMSEA = 0 (95%) [0, 0.003], SRMR = .02). In this model, positive emotions ($\beta = .27, p < .001$), positive relationships ($\beta = .22, p < .001$), and accomplishment ($\beta = .22, p <.001$) were significant contributors to life satisfaction with moderate effect sizes (see Figure 1).

Figure 1

MASEM Results



Note. *** = p < .001

The Strongest PERMA+4 Predictors of Job Satisfaction. Two studies were identified where PERMA+4 building blocks strongly predicted job satisfaction based on multiple regression analysis. Dreer (2021) found that the largest contributor to job satisfaction among 511 teachers was positive emotions with a moderate effect size ($\beta = .34$), followed by accomplishment ($\beta = .10$) and positive relationships ($\beta = .05$) with small effect sizes. Kern et al. (2014) also found that the largest contributor to job satisfaction among 153 school employees was positive emotions with a moderate effect size ($\beta = .49$), followed by positive relationships with a medium effect size ($\beta = .28$).

The Relationships Among PERMA+4 Building Blocks. Empirical studies on PERMA and PERMA+4 have found that the PERMA+4 building blocks are significantly positively correlated with one another. Sixteen empirical studies on PERMA and PERMA+4 have looked at the relationships among building blocks and found significant positive relationships among all the building blocks. However, most of the research looking at the relationship between PERMA or PERMA+4 and well-being has focused on establishing the building blocks as predictors of

well-being or other outcomes and only looked at these correlational relationships among building blocks as part of that primary research focus. For example, Goodman et al. (2018) found the elements of PERMA were significantly positively associated with correlations ranging from moderate to strong ($r = .37$ to $r = .78$) among 517 MTurk adults. As part of the development of the Positive Functioning at Work Scale, Donaldson and Donaldson (2020) found that the PERMA+4 building blocks were also all significantly positively correlated with one another, with correlations ranging from small ($r = .19$) to mostly moderate and strong ($r = .29$ to $r = .73$) among 230 coworker pairs.

Only one study tested a theoretical model that focused on hypothesizing specific relationships among the PERMA building blocks. Goh et al. (2021) tested a mediation model using PERMA variables. They found that positive relationships and meaning mediated the positive relationship between positive emotions and accomplishment, with meaning emerging as a stronger mediator. They also tested for engagement as a mediator of the positive relationship between positive emotions and accomplishment but did not find it to be a significant mediator (Goh et al., 2021).

Moderators. Of the 103 articles included in this review, no studies examined the moderators of the relationship between PERMA and SWB or the relationship between PERMA+4 and SWB.

PERMA+4 Predicting SWB Over Time. Among these 102 empirical studies, no longitudinal studies looked at whether PERMA or PERMA+4 predicted SWB over time and all of the studies that studied PERMA or PERMA+4 as a predictor of SWB used cross-sectional survey designs (Cabrer & Donaldson, 2024).

Part 2. A Review of Relevant Theories & Research on PERMA+4 and Subjective Well-being

To further explore the relevant literature, I supplemented the systematic literature review by conducting a literature review that focused on relevant theories and existing research on SWB to provide an overview of how each of the PERMA+4 building blocks improves well-being.

Subjective Well-being

Subjective well-being is a measure of well-being based on an individual's evaluation of how well their life is going (Diener, 1984). SWB is a multi-dimensional construct consisting of a cognitive component based on feelings of overall life satisfaction and an affective component characterized by experiencing more positive affect and less negative affect on average (Diener, 1984; Diener et al., 2017). SWB can also be domain-specific based on evaluating specific aspects of one's life in different domains, such as job satisfaction and the balance of positive and negative affect at work (Diener et al., 2017; Neumeier et al., 2017). Although there are different approaches to operationalizing well-being in the research literature (Jayawickreme et al., 2012), SWB was selected to operationalize well-being in this research because it is an established universal measure of well-being across cultures. It is also the most validated well-being construct based on its widespread use across a variety of disciplines, such as psychology, economics, and public health, with an extensive evidence base of more than 170,000 articles and books (Diener et al., 2017; Diener et al., 2018). Due to the overlap of positive affect with the PERMA+4 building block of positive emotions and since the cognitive and affective components of SWB have been found to have differential effects on some outcomes (Diener et al., 2017), this research will focus on cognitive SWB (life satisfaction and job satisfaction).

According to resource views of SWB, evaluations of life satisfaction are determined by the extent to which one feels they have resources (material, cognitive, spiritual, and relational) to fulfill their needs and desires (Diener et al., 2018; Kahneman, 1999). This resource view aligns with the Conservation of Resources (COR) Theory, which describes how people aim to pursue, maintain, build, and protect resources they value. These resources are limited and, when depleted, can negatively impact well-being by leading to stress and burnout (Hobfoll, 1989). From this perspective, each of the PERMA+4 building blocks can be viewed as important resources that contribute to life satisfaction and satisfaction in other domains, such as job satisfaction. Although a portion of one's well-being is considered dispositional and fixed, it is also possible to increase SWB through environmental factors and intentional behaviors (Diener et al., 2017; Lyubomirsky et al., 2005). Therefore, PERMA+4 can serve as a useful framework to guide organizations and workers on how they can intentionally improve SWB (Donaldson & Donaldson, 2020; Seligman, 2018).

How PERMA+4 Building Blocks Improve Well-being

In addition to viewing PERMA+4 as resources that contribute to life satisfaction, additional theories and mechanisms have been identified for each of the PERMA+4 building blocks that explain how they improve well-being. I will now describe how each PERMA+4 building block has been defined in the literature, the theories and mechanisms that explain how each building block contributes to well-being, and the relevant research that has been done on SWB and each building block that can provide background related to the research questions.

Positive Emotions. Positive emotions are positively-valenced (pleasant-feeling) discrete emotional states (Russell, 2003), such as happiness and joy (Seligman, 2011). Other examples of positive emotions are gratitude, love, awe, amusement, and pride (Fredrickson, 2013). Positive

emotions are discrete experiences, while positive affect, an aspect of SWB, refers to a general feeling or aggregate of positive emotions over time (Tellegen et al., 1999). Positive emotions contribute to well-being through several pathways: cognitive, resource-building, affective, and physical (Diener et al., 2020). According to the Broaden and Build Theory of Positive Emotions, positive emotions have an immediate cognitive effect, broadening one's attention and awareness in the moment, which encourages more novel and exploratory thoughts and actions. As more positive emotions are experienced over time, this leads to the building of personal resources (e.g., physical, social, psychological) that lead to more personal growth and improved well-being and health (Fredrickson, 2001). Positive emotions also have an affective effect, triggering upward spirals where the building and broadening effects of positive emotions lead to more positive emotions that create more of these positive effects (Garland et al., 2010). Positive emotions also help counteract the negative impact of negative emotions like anxiety and fear (Frederickson & Levenson, 1998; Frederickson et al., 2000). Finally, positive emotions have also been found to have directly beneficial physical effects. For example, they have been found to improve cardiovascular, endocrine, and immune functioning, leading to greater health (Kuykendall & Tay 2015).

Previous research has established that positive emotions are positively associated with life satisfaction across cultures. One study using a large international sample ($N = 55,666$) from 41 nations found that positive affect was moderately correlated with life satisfaction ($r = .29$) and was slightly higher among individualistic cultures ($r = .32$). This correlation was even higher among those living in the United States with a large correlation ($r = .59$) (Suh et al., 1998). Research using a sample of 9,000 from 47 countries also found that life satisfaction is higher in countries where positive emotions are more highly valued and, therefore, are experienced more

frequently (Bastian et al., 2014). In addition, another meta-analysis of 27 studies found that positive affect was moderately correlated ($r = .49$) with job satisfaction (Connolly & Viswesvaran, 2000).

Engagement. Engagement is fully utilizing one's skills, strengths, and attention in a challenging task (Seligman, 2011), which leads to experiencing flow, a state of intense focus, engagement, and absorption (Csikszentmihalyi, 1975). The flow experience has six characteristics: deep concentration, the merging of action and awareness, loss of self-consciousness, a sense of control, distortion of time, and an autotelic experience that feels pleasurable and rewarding (Csikszentmihalyi, 2000). Three conditions are needed to experience flow: having a balance between challenge and skills, the presence of clear goals, and receiving immediate feedback on progress (Csikszentmihalyi, 1990). In a work context, flow is distinct from work engagement, which is a positive and rewarding state where one experiences vigor characterized by high levels of energy and effort, dedication where one is deeply involved, and absorption where one is entirely concentrated and immersed in work (Schaufeli et al., 2002). However, flow does overlap with the absorption aspect of work engagement (Yan & Donaldson, 2022).

According to Csikszentmihalyi (year/s), flow leads to well-being through several mediators. People who experience flow regularly are more likely to develop positive traits, like higher self-esteem. They also develop better concentration, a cognitive resource that can prevent the depletion of other cognitive resources and helps lead to better performance. Flow experiences also lead to personal development and growth, which lead to positive affect and in the longer term, SWB (Csikszentmihalyi, 1990). Flow also contributes to experiential well-being, which comes from awareness of oneself in the moment while engaged in an activity. Experiential well-

being is embedded within the flow experience and provides the individual with personal resources that help them deal with challenges (Shmotkin, 2005). Since flow is a positive experience in the moment that creates experiential well-being, it also contributes to employees' evaluations of their well-being (Ilies et al., 2017). According to JD-R theory, engagement at work can also be viewed as an important job resource, which helps individuals carry out their work more effectively and helps meet job demands to prevent stress and burnout (Demerouti et al., 2001).

Although flow has been found to be a predictor of life satisfaction, more research has been conducted that has established it as a stronger predictor of affect (Landhäuser & Keller, 2012). Flow has been found to be positively moderately associated with life satisfaction (Wu et al., 2021). In addition, flow has also been found to be a strong predictor of job satisfaction (Maeran & Cangiano, 2013).

Positive Relationships. Positive relationships are characterized by feeling supported and valued by other people (Seligman, 2011). In a work context, social support at work is a construct in the organizational psychology literature that has been conceptualized in many different ways, but broadly, it is defined as interpersonal support from other people at work (Jolly et al., 2021). In the positive psychology literature, positive relationships at work have been theorized as high-quality connections (HQC), one-on-one interactions characterized by mutual trust, active engagement, and positive regard (Dutton, 2003). Self Determination Theory (SDT) has also identified a feeling of relatedness, the desire for a sense of belonging and meaningful relationships, as a basic psychological need for work motivation that supports well-being (Deci & Ryan, 2000).

Positive relationships at work have been identified as an important resource that affects the well-being of workers in several ways. Social support is a vital social resource for the prevention of stress and burnout according to COR theory (Hobfoll, 1989) and an important job resource that can help meet job demands and prevent strain and burnout according to JD-R Theory (Demerouti et al., 2001). Building on JD-R, the Job Demand-Control-Support Model states that high job demands in combination with low control and low social support will lead to higher strain and lower well-being (Johnson & Hall, 1988). Social support has also been identified as a resource that can help serve as a buffer between stressors and experiences of stress and strain (Viswesvaran, Sanchez, & Fisher, 1999). In addition, HQCs are brief interactions at work that are theorized to be energizing, leading to better work performance and improved well-being (Dutton, 2003). Relational energy is a positive psychological state generated from these types of positive interpersonal interactions that are believed to lead to a range of positive work outcomes (Owens et al., 2016). Finally, according to SDT, a feeling of relatedness is a basic psychological need that, when fulfilled along with the needs of autonomy and competence, leads to autonomous motivation, a type of motivation that contributes to better work performance and well-being (Deci & Ryan, 2000).

Research on SWB has identified social relationships as a strong predictor of SWB. In a 2018 review of the SWB literature (Diener et al., 2018), social relationships were highlighted as one of the strongest predictors of SWB (e.g., Argyle, 1999; Myers, 1999). Another review found that having positive relations with others was a strong predictor ($r = .57$) of life satisfaction (Margolis et al., 2021). In another study comparing a large international sample of adults with high perceived social support ($N = 1,094,109$) and those with low perceived social support ($N = 73,865$), a significant difference in life satisfaction was found with medium to large effect sizes.

In this study, basic needs and social support were the strongest personal characteristic predictors, with social support being the strongest (Geerling & Diener, 2020). In addition, a meta-analysis of 259 studies and 219,625 participants found that social support had a moderate positive association with job satisfaction (Humphrey et al., 2007).

Meaning. The building block of meaning refers to having a sense of purpose and life direction, which contributes to feeling that one's life is valuable and worth living (Seligman, 2011). This is one component of the construct of meaning in life, which includes purpose and has two other components: coherence and significance. Purpose is having core goals and direction in one's life, coherence is feeling that one's life makes sense, and significance is feeling that life has value and is worth living (Steger et al., 2006). In a work context, the construct of meaningful work means having work that feels important, worthwhile, and valuable (Pratt & Ashforth, 2003). Like Meaning in Life, it also has three aspects: psychological meaningfulness, where people judge their work to be meaningful; meaning making through work, which helps deepen people's understanding of themselves and the world; and motivations to positively impact the greater good that aligns with purpose (Steger et al., 2012).

The Meaning Maintenance Model describes meaning in life as requiring cognitive skills to maintain a sense of meaning and purpose that contributes to well-being (Heine et al., 2006). Meaning may also indirectly lead to SWB by enhancing other factors that are important to SWB, such as self-control, which is also associated with higher SWB (Wiese et al. 2018). In addition, according to the Job Characteristics Model, the job characteristics of task variety, task identity, and task meaningfulness contribute to work meaningfulness, a psychological state at work that contributes to higher levels of work motivation and job satisfaction (Hackman & Oldham, 1976).

Meaning has been found to be positively associated with SWB. A meta-analysis of 147 studies found that the presence of meaning in one's life had a positive association with SWB with a medium effect size. They also found that life satisfaction had a larger effect size than affective SWB, possibly due to both meaning and life satisfaction being evaluated cognitively (Li et al., 2021). Another review also found that purpose in life was a very strong predictor ($r = .63$) of life satisfaction (Margolis et al., 2021). In addition, meaningful work has been found to predict life and job satisfaction beyond other common predictors of these outcomes (Steger, 2012). One meta-analysis also found that meaningful work had moderate to large associations ($r = .47$) with life satisfaction (Allan et al., 2019).

Accomplishment. Accomplishment is experiencing mastery and achievement. In a work context, accomplishment has also been conceptualized as an individual's perception of their work performance (Goh et al., 2021). Experiencing accomplishment at work is based on an individual's evaluation of achieving goals that promote mastery and development in one's work or career, as well as other achievements like awards and promotions (Seligman, 2011). According to Seligman (2011), accomplishment creates a sense of pride, a positive emotion that contributes to well-being. The success-resource model also describes how the achievement experiences of goal attainment, positive feedback, pro-social success, and career success are important resources for worker well-being because they are valued, create positive emotions, assist with the attainment of other resources like self-efficacy, facilitate learning, are energizing and attention directing, and directly and positively impact both well-being and health, (Grebner et al., 2008; Grebner et al., 2010). In addition, the importance of accomplishment has also been identified by SDT, where a feeling of competence (the need to produce desired outcomes and to experience mastery) is an important basic psychological need that, when fulfilled along with the

basic needs of autonomy and relatedness, leads to autonomous motivation, which contributes to better work performance and well-being (Deci & Ryan, 2000).

Research on SDT has established the fulfillment of basic psychological needs as an antecedent to autonomous motivation and well-being (Deci et al., 2017; Manganelli et al., 2018). In research focused on SWB, achievement in the work domain has primarily been studied through the outcome of work performance and its association with job satisfaction, where one meta-analysis found that work performance had a moderate positive association ($r = .30$) with job satisfaction (Judge et al., 2001). In addition, personal mastery has also been found to have a moderate association ($r = .44$) with a composite measure of SWB (that included positive affect, negative affect, and life satisfaction) (Margolis et al., 2021).

Physical health. Physical health is characterized by having health assets that are biological, functional, and psychological in nature. Having biological health assets refers to optimal physiological functioning (Seeman, 1989) and may include reflecting on one's health and habits (Donaldson et al., 2021). Having functional health assets is based on how well one can carry out their physical duties (Seligman, 2008; Donaldson et al., 2021). Finally, having psychological health assets refers to feelings that enhance perceptions of one's physical health, such as feeling control over one's health and optimism about one's future health (Seligman, 2008; Donaldson et al., 2021).

Physical health is believed to impact well-being through several mechanisms. Physical health affects people's day-to-day lives, impacting their evaluation of their SWB (Diener et al., 2018). People in good physical health are more likely to feel and function well (Donaldson et al., 2021). Physical health also buffers against psychological disorders (Seligman, 2008) and impacts SWB directly through biological and physiological processes (Diener et al., 2018). Health can

also indirectly affect SWB by influencing other aspects of life, such as personal control, social engagement, social satisfaction, discrimination, stigma, marriage, employment, income, independence, and self-esteem (Das et al., 2020).

Most of the research on SWB has looked at health as an outcome, although it has been established that health can also influence SWB (Diener et al., 2017). In a review of the SWB literature, health was found to be moderately associated with SWB based on self-reports, but this association was smaller when more objective measures were used (Diener et al., 2018). However, more research is needed to better understand the effect sizes, as no available meta-analyses or systematic reviews have looked at this association (Diener et al., 2017). In one study comparing a large international sample of adults who self-reported the presence of health problems ($N = 347,170$) with those who did not report health problems ($N = 1,075,730$), a significant difference in life satisfaction was found with a small effect size ($d = .343$). In addition, a comparison of participants who were satisfied with their health ($N = 735,724$) with those who were dissatisfied ($N = 202,071$) yielded a medium effect size for life satisfaction ($d = 0.550$) (Geerling & Diener, 2020). Occupational health research in healthcare settings has also found that work stress is associated with lower job satisfaction, which leads to poorer health outcomes (Amati et al., 2010).

Mindset. A positive mindset is future-oriented, persevering, and characterized by a growth mindset (Donaldson & Donaldson, 2020), the belief that one can develop one's abilities through hard work and dedication (Dweck, 2008). Mindset contributes to well-being in several ways. People with a growth mindset actively pursue personal growth, see failure as learning opportunities, seek feedback to improve performance, and have a mastery orientation toward attaining goals (Dweck, 2008). People with a growth mindset at work believe their work will

provide them with growth opportunities, expect to make meaningful contributions to organizational goals, and expect meaningful challenges at work that will develop them (Donaldson et al., 2021).

Another related and well-established construct in the research literature, Psychological Capital (PsyCap), has been theorized as another aspect of building a positive mindset among workers (Donaldson et al., 2022). PsyCap is a positive psychological state characterized by high levels of hope, self-efficacy, resilience, and optimism (Luthans et al., 2007). Hope is persevering toward goals and redirecting work toward goals as needed to succeed. Self-efficacy is having confidence in one's ability to pursue and put effort into succeeding at a challenging task. Resilience is the ability to bounce back and succeed in the face of challenges and adversity and optimism is a positive attribution style about succeeding in the present and the future (Luthans et al., 2015). When these four psychological resources are combined, they have been empirically demonstrated to form a high-order core construct of PsyCap with the shared commonalities of intentionality, a sense of control, and self-directed goal pursuit (Luthans et al., 2007) that also contribute to a development-based mindset (Luthans & Youssef-Morgan, 2017) and the belief that one can succeed, find solutions, and bounce back from stressful events (Luthans & Youssef-Morgan, 2017).

Research has found that a positive mindset contributes to workers' life and job satisfaction. A growth mindset has been found to have a small association ($r = .23$) with life satisfaction among adults due to stronger beliefs about happiness being changeable (Van Tongeren & Burnette, 2018) and having a growth mindset versus a fixed mindset at work has also been found to be associated with more job satisfaction (Rattan & Dweck, 2018). Another study found that PsyCap had a small positive association with life satisfaction among

entrepreneurs (.302) (Bockorny & Youssef-Morgan, 2019), and a meta-analysis that included more than 12,000 employees found that PsyCap was moderately to strongly associated with job satisfaction ($r = .45$, corrected $r = .54$) (Avey et al., 2011).

Environment. Environment is characterized by a physical work environment with access to three essential elements for well-being: nature, natural light, and physical safety (Donaldson & Donaldson, 2020). Researchers have argued that people can spend more than one-third of their lives at work, making the work environment an important contributor to workers' well-being (Sander et al., 2019).

The physical work environment has been found to influence workers' well-being through cognitive, affective, and relational responses. Cognitively, the work environment can facilitate or interfere with one's ability to focus. An inability to focus can lead to a depletion of cognitive resources, which, according to COR theory and JDR theory, can negatively impact well-being. One's work environment can also affect their emotions (Sander et al., 2019). For example, the work environment can elicit more positive emotions that contribute to well-being, as described by Broaden and Build Theory (Frederickson, 2000). Perceptions of beauty at work, such as aesthetically pleasing office design or access to nature, are also believed to create more experiences of positive emotions (Donaldson et al., 2022; White, 1996). Finally, the work environment can also have a relational effect, which can help create or facilitate relationships between people, which in turn can positively impact well-being (Sander et al., 2019).

Research supports that the physical work environment can impact worker well-being, although more research is needed using the outcome of SWB. One study found that a physical work environment with adequate air quality, a comfortable temperature, adequate lighting, and less noise had small to moderate positive associations with employee well-being (Boegheim et

al., 2021). A systematic review of 133 studies also found that physical workplace characteristics like noise, air, and light had a small influence on engagement, depression, and burnout. Still, more research is needed to explore the relationship between physical workplace characteristics and mental health (Bergefurt et al., 2022).

Economic Security. Economic security is having a perception of the financial security needed to meet individual needs (Donaldson & Donaldson, 2020). This construct has also been referred to as financial well-being in the research literature and is impacted by income, savings, and spending (Donaldson et al., 2021). Financial well-being has also been found to be impacted by other antecedents, including financial knowledge, attitude towards money, financial behaviors like financial decision-making and coping strategies, financial self-efficacy, future time orientation, financial socialization, and risk orientation (Kaur et al., 2023).

Income affects well-being because it helps fulfill the basic needs necessary for quality of life, such as food and shelter (Diener et al., 2018). If one is not able to meet basic needs or financial obligations, it can lead to stress, depression, and anxiety (Salignac et al., 2020). Income may also increase SWB by buffering the impacts of negative emotions such as worry (Das et al., 2020). This aligns with COR theory, where a perception of a lack of financial resources or even a threat of those resources can create stress and negatively impact well-being (Hobfoll, 1989). In contrast, if individuals feel certain about their financial future, they can more effectively plan and make bigger life decisions that create stability (Rojas, 2022) and positively impact their well-being (Donaldson et al., 2021).

A recent review found that control over financial matters was a moderately strong predictor ($r = .49$) of life satisfaction (Margolis et al., 2021). Research has also looked at indicators of economic security and found associations with SWB. In a large international

sample comparing those with a higher income ($n = 24,307$) with those with a lower income ($n = 11,308$), there was a significant difference in life satisfaction with a large effect size ($d = 1.39$) (Geerling & Diener, 2020). In addition, in a sample from 123 countries, meeting basic needs like food and shelter had a moderate correlation ($r = .31$) with SWB (Tay & Diener, 2011). However, there is also some evidence that income only fulfills basic needs until a certain point, where it may have a weaker relationship with SWB at higher incomes (Easterlin, 1974; Easterlin & O'Connor, 2022). One study of a large international sample ($N = 1.7$ million) found that this satiation point was \$95,000 USD for life satisfaction, although the income point can vary by country (Jebb et al., 2018). Income has also been found to have a small positive association with job satisfaction (Boudreau et al., 2001)

Discussion

The aim of this literature review was to explore previous research that answers the research questions and provide an overview of relevant literature and theories on SWB and how the PERMA+4 building blocks improve SWB. A systematic review of the empirical literature on PERMA and PERMA+4 provided some exploratory insights into what previous research has been conducted to answer the research questions. A review of the relevant theories and research literature on each building block provided insight into how each building block improves well-being and how some building blocks interact to improve well-being.

To answer Research Question 1, six research articles on PERMA and PERMA+4 were identified where each of the PERMA+4 elements were significantly positively associated with life satisfaction with mostly moderate to strong correlations. In all six of these studies, positive emotions were among the top three building blocks most strongly correlated with life satisfaction. They were also the strongest predictor in most of the studies, followed by meaning,

accomplishment, and positive relationships. Only one of these studies (Kern et al., 2014) conducted a multiple regression, finding that only meaning and negative emotions contributed significant variance to SWB. I conducted a meta-analysis of the correlations in the studies and found the three building blocks that were the largest predictors of life satisfaction across studies were positive emotions, meaning, and accomplishment. I also conducted a MASEM analysis based on correlation data from the six studies and found that positive emotions, relationships, and accomplishment significantly contributed to life satisfaction when the model included a higher-order overall PERMA. However, the analysis did not work when testing a model with the PERMA building blocks as predictors of life satisfaction without the higher-order factor. This may be due to the limitation of a small number of studies included in the analysis. For Research Question 1, these exploratory findings imply that positive emotions, relationships, meaning, and accomplishment may be the strongest predictors of SWB. However, it should be noted that this conclusion is only based on a small number of studies and mostly self-report, subject to inflated correlations (Donaldson & Grant-Vallone, 2002). It should also be noted that the difference in effect sizes between these top three building blocks were small and the meta-analyses were conducted using a small sample of studies, especially for the building blocks of work environment, mindset, and economic security. A review of the literature on SWB also provides insight into which PERMA+4 building blocks may be strong predictors of SWB, with positive emotions and positive relationships identified as strong predictors. Meaning has been identified as a moderate predictor, although there is a lack of research that compares the building blocks as predictors of well-being to one another. Therefore, for Research Question 1, it will be helpful to conduct more exploratory research with workers to gather their perspectives based on their lived experiences to see if they align with the research to date on PERMA+4.

In addition, for Research Question 2, my systematic review of the empirical literature identified 16 empirical studies on PERMA and PERMA+ 4 that have found significant positive relationships among all the building blocks that range from small to moderate to large. This finding is consistent with Seligman's (2018) belief that there are likely causal and third-variable connections among the building blocks. However, this literature review did not uncover research studies on how the PERMA+4 building blocks interact to improve well-being. For Research Question 2, it will also be helpful to further explore potential connections among the PERMA+4 building blocks and how they may interact to improve SWB based on the perspectives and experiences of workers.

For Research Question 3, this review did not uncover any empirical studies that looked at or identified moderators of the relationship between PERMA and SWB or the relationship between PERMA+4 and SWB. Therefore, more research is also needed to understand workers' perspectives and experiences to identify potential moderators at work that enable PERMA+4 building blocks to improve SWB. Finally, this review also did not uncover any empirical studies that looked at PERMA+4 as a predictor of SWB over time to answer Research Question 4. Therefore, Study 2 will also aim to answer Research Question 4.

Chapter 3: Study 1

For this dissertation, I used an exploratory sequential mixed methods research design consisting of two phases: a qualitative phase (Study 1) followed by a quantitative phase (Study 2). Study 1 was qualitative and explored how the PERMA+4 building blocks affect the SWB of workers through the collection of qualitative data about their perspectives and lived experiences. The findings of Study 1 were later tested quantitatively with a larger sample of workers in Study 2 to generalize the initial qualitative findings based on quantitative results (Creswell & Clark, 2017). The aim of Study 1 is to answer the following research questions:

Research Question 1: Which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers?

Research Question 2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve the well-being of workers?

Research Question 3: Are there moderators or enablers that help the PERMA+4 building blocks improve well-being for workers?

Study 1 Method

Study 1 used a phenomenological approach to explore workers' perspectives and lived experiences regarding their well-being and the factors that contribute to their well-being. Phenomenological studies focus on developing an understanding of a particular phenomenon and the common experiences individuals have had with that phenomenon. (Creswell, 2007).

Participants

I used convenience and snowball sampling through my personal and professional networks to recruit full-time workers via social media and email. To be included in the study, participants had to meet the following criteria: 1) be 18 years of age or older, 2) be employed

full-time, and 3) be employed and reside in the United States. I focused on full-time workers in the United States to minimize potential the introduction of potential confounds to the study related to participant characteristics such as geographic location, culture, and amount of time spent at work. People interested in participating were first asked to complete a pre-screener online questionnaire that included their name, email address, questions about the inclusion criteria, information about their job (role, industry, manager or not a manager of direct reports), and demographic information (age, gender, education level, race/ethnicity) to ensure a wide range of demographics and jobs were represented in the sample. A large number of responses to the pre-screener survey (448 in total) were received. I then screened for bots and potentially fraudulent submissions by reviewing IP addresses and removed those who made multiple submissions posing as different people from the same IP address, IP addresses that were not from the United States, and IP addresses that were flagged based on online research as potentially fraudulent, leaving 44 potential participants. From this pool, I then eliminated people I personally knew who had expertise in research or well-being and selected participants to interview based on demographics and occupation to ensure a diverse sample. As I interviewed participants, I asked for participant referrals from the participants I interviewed and people in my network to recruit a diverse sample. I recruited 24 participants to be interviewed. The final sample size was determined to be adequate during data collection based on the richness of the data set, the focus of the research as directed by the research questions, and the diversity of the sample as recommended for reflexive thematic analysis (Braun & Clarke, 2021; Malterud et al., 2016). Table 6 provides a summary of participant characteristics. Slightly more women were represented in the sample than men ($n = 14$, 58.3%), and participants' ages ranged from 22 to 63 ($M = 38.29$, $SD = 10.94$). Most participants were White/Caucasian ($n = 10$, 41.7 %), followed by

Hispanic /Latino/a/x (n = 5, 20.8 %), Black/African American (n = 4, 16.7%), Asian/Asian American (n = 3, 12.5%), and mixed (n = 2, 8.3% %). Most participants had a Bachelor's degree (n = 14, 58.3%), followed by a graduate or professional degree (n = 6, .3%), an Associate's or technical degree (n = 2, 8.3%), and some college but no degree (n = 2, 8.3%). A variety of jobs and industries were represented with most in health care/social assistance (n = 4, 16.7%), followed by information/information services/data processing (n = 3, 12.5%), and professional/scientific/technical services (n = 3, 12.5%).

Table 6

Study 1 Participant Characteristics

#	Age	Gender	Race/ Ethnicity	Education	Job Title	Industry	Manages Others	Work Location
1	38	Man	White / Caucasian	Bachelor's degree	Data Analyst	Professional/Sci- entific/Technical Services	Yes	Remote
2	28	Woman	Black/African American	Bachelor's degree	Director, People Operations	Professional/Sci- entific/Technical Services	Yes	Remote
3	26	Woman	Asian	Graduate or professional degree	ISPRC Specialist	Health Care/Social Assistance	No	Remote
4	22	Man	Asian and White / Caucasian	Some college but no degree	Special Programs Teacher Assistant	Education/Educa- tional Services	No	School
5	34	Man	White / Caucasian	Graduate or professional degree	CEO	Health Care/Social Assistance	Yes	Remote
6	56	Woman	White / Caucasian	Some college but no degree	HR Coaching Program Manager	Health Care/Social Assistance	No	Remote
7	48	Woman	White / Caucasian	Bachelor's degree	Admin Asst	Administrative/S upport	No	Remote
8	42	Woman	White / Caucasian	Graduate or professional degree	Owner/Artist	Arts/Entertainme- nt/Recreation	Yes	Home Studio
9	63	Woman	White / Caucasian	Bachelor's degree	Registered Nurse	Health Care/Social Assistance	No	Remote
10	28	Woman	White / Caucasian	Graduate or professional degree	SR HR Coordinator	Real Estate/Rental/Le asing	No	Hybrid

11	27	Man	Hispanic / Latino/a/x	Bachelor's degree	Project Coordinator	Marketing Agency	Yes	Remote
12	44	Man	Black/African American	Bachelor's degree	Realtor	Real Estate/Rental/Leasing	Yes	Hybrid
13	43	Woman	White / Caucasian	Bachelor's degree	Sr. Benefits Analyst	Government/Public Administration	Yes	Hybrid
14	39	Man	Asian	Bachelor's degree	Design Consultant	Consulting	No	Office
15	43	Woman	Pacific Islander / Native Hawaiian and White / Caucasian	Graduate or professional degree	Attorney	Legal Services	Yes	Office
16	47	Man	Hispanic / Latino/a/x	Associates or technical degree	Operations Manager	Hospitality/Accommodation/Food Services	Yes	Restaurant
17	22	Man	Black/African American	Bachelor's degree	Systems Engineer	Information/Information Services/Data Processing	No	Remote
18	42	Woman	White / Caucasian	Graduate or professional degree	Assistant Principal	Education/Educational Services	Yes	School
19	44	Man	Hispanic / Latino/a/x		AIM Program Manager	Electromechanical Distributor	Yes	Hybrid
20	25	Woman	Asian	Bachelor's degree	Senior Enterprise Account Executive	Information/Information Services/Data Processing	No	Remote
21	54		Hispanic / Latino/a/x	Bachelor's degree	Director of Graduate Training Programs	Nonprofit management	Yes	Hybrid
22	33	Man	Black/African American	Bachelor's degree	Systems Engineer	Information/Information Services/Data Processing	No	Hybrid
23	33	Woman	White / Caucasian	Bachelor's degree	Project Manager	Professional/Scientific/Technical Services	Yes	Office
24	38	Woman	Hispanic / Latino/a/x	Bachelor's degree	Product Marketing Manager	Manufacturing	Yes	Remote

Note. Numbers indicate the order in which participants were interviewed.

Procedure

Prior to data collection, I participated in a reflective journal exercise where I wrote about my own experiences and the situations that have influenced these experiences relevant to the research questions (Moustakas, 1994; Cresswell, 2007). In qualitative research, the researcher serves as the research instrument, so this reflexive step allowed me to develop an awareness of any preconceived ideas about the research topic that could influence data collection and interpretation (Cresswell, 2007). To collect the data, I conducted one-on-one semi-structured interviews that explored participants' views, beliefs, opinions, and lived experiences as full-time workers. Before each interview, I asked the participant via email to complete an IRB-approved interview consent form that included the study purpose, how the data gathered will be used, and how the participant's confidentiality will be protected. I conducted semi-structured interviews with participants using Zoom, an online videoconferencing platform, and all interviews were audio recorded using Zoom and Otter.ai software and transcribed using Otter.ai software. To guide the interview, I followed an interview protocol (see Appendix A). For semi-structured interviews, a set of predetermined questions was asked of all study participants to minimize bias but adapted to each interview with probes and follow-up questions as needed to bring out richer and more detailed participant responses. At the start of each interview, I provided an overview of the study and what to expect during the interview to build rapport and trust and set expectations. To ensure participants had a comfortable experience they consented to throughout the interview, I explained that the interview was voluntary. They could refuse to answer any questions or request to stop the interview at any time. To minimize social desirability bias, I also told them that their answers will be kept confidential and no identifying information will be shared in

connection with their data. Before the interview began, I asked for their consent to record the interview and told them that I will be the only person with access to the recordings and transcripts with the plan to destroy the audio recording after the research study is completed. Lastly, I asked each participant if they had any questions they would like me to answer before the interview began. Interview times ranged from approximately one to one and a half hours.

To be able to answer the interview questions, the participants needed a basic understanding of what the PERMA+4 building blocks were. Therefore, before the interview questions, I showed each participant a three-minute video I had prerecorded that provided an overview and the definitions of the PERMA+4 building blocks. During the interview, I also showed them the definitions of the building blocks I asked them about in a PowerPoint presentation so they could reference them while answering the interview questions to ensure participants consistently understood the definitions of the building blocks we discussed. At the end of the interview, I thanked each participant for their time and informed them that I would email their Amazon e-gift certificate after the interview. I also asked them if they would be willing to volunteer for a respondent validity check. After completing the interview, all participants were compensated with a \$25 Amazon e-gift card.

Data Analysis

The data were analyzed using reflexive thematic analysis, a flexible method for qualitative data analysis that involves reflexive and iterative engagement with the data to interpret it into themes (Braun & Clark, 2006). I followed the six phases of reflexive thematic analysis. First, to ensure data accuracy and familiarize myself with the data, I relistened to the audio recordings and reviewed and corrected each transcript by comparing the Otter.ai-recorded transcripts to the audio recordings. Next, I coded the dataset. Coding was both deductive and

inductive to answer the research questions through an iterative process where I assigned codes to pieces of data that were meaningful and relevant to the research questions based on my interpretation. To code, I used both semantic coding, which captures surface-level meaning, and latent coding, which aims to capture implicit meaning from participants. In the third phase, I conducted thematic analysis, where I generated an initial set of themes based on the codes and my insights as a well-being researcher, capturing broader patterns of meaning in the dataset to answer the research questions. After an initial set of themes was created, the fourth phase involved reviewing and revising the themes as needed to ensure they adequately reflected the codes, worked together, and addressed the research questions. In the fifth phase, I refined and named the themes to create a description of each theme and weave them into a cohesive narrative. In the final phase, I continued this process of refining themes as I wrote up the findings into a story that answered the research questions and included relevant excerpts from the data. Throughout the entire process, I continued to practice reflexivity as a researcher by journaling any thoughts, ideas, or interpretations of the data that also helped inform the data analysis and write-up (Braun & Clarke, 2022).

In addition, I conducted respondent validation to establish validity, which in a qualitative study is based on whether the researcher's understanding and interpretation of the data is an accurate reflection of what study participants believe (Creswell, 2007). To do this, I shared a summary of the study findings with two of the participants via email to confirm if the findings resonated with them as an authentic representation of workers' well-being and experiences. At the end of each interview, I asked each study participant if they would like to volunteer to participate in the respondent validation. Two participants were selected at random from the pool of volunteers. One participant provided feedback via email, and the other provided feedback

through a conversation on Zoom. Both participants confirmed they believed the findings were credible and provided a good representation of full-time workers' views and experiences.

Participants of the respondent validation received a \$10 Amazon gift card for participating after their feedback was given.

Study 1 Findings

The findings from Study 1 provide further insights into how the PERMA+4 building blocks improve SWB based on the views and experiences of full-time workers. To answer each research question, I identified themes in my analysis of the dataset. Table 7 provides a summary of the themes followed by a more detailed description of the findings by research question and theme.

Table 7

Study 1 Research Questions and Themes

Research Question	Themes
RQ1: Which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers?	The most important PERMA+4 building blocks for life satisfaction: <ul style="list-style-type: none">• Positive emotions contribute most to life satisfaction.• Physical health contributes most to life satisfaction.• Economic security contributes most to life satisfaction. The most important PERMA+4 building blocks for job satisfaction: <ul style="list-style-type: none">• Engagement contributes most to job satisfaction.• Meaning contributes most to job satisfaction.• Accomplishment contributes most to job satisfaction.
RQ2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve the well-being of workers?	Positive emotions are an outcome of five building blocks: <ul style="list-style-type: none">• Positive emotions are an outcome of positive relationships.• Positive emotions are an outcome of meaning.• Positive emotions are an outcome of accomplishment.• Positive emotions are an outcome of economic security.

-
- Positive emotions are an outcome of **environment**.

Accomplishment is an outcome of three building blocks:

- Accomplishment is an outcome of **engagement**.
- Accomplishment is an outcome of **positive relationships**.
- Accomplishment is an outcome of **physical health**.

RQ3: Are there moderators or enablers that help the PERMA+4 building blocks improve well-being for workers?

Enabling condition for PERMA+4 to improve life satisfaction:

- Having **work-life balance** enables PERMA+4 to improve life satisfaction.

Enabling conditions for PERMA+4 to improve job satisfaction:

- Having **work-life balance** enables PERMA+4 to improve job satisfaction.
- Having **a supportive supervisor** enables PERMA+4 to improve job satisfaction.

Note: For RQ2, the themes were framed in terms of outcomes but can also be interpreted in terms of antecedents (e.g., positive relationships are an antecedent of positive emotions)

The PERMA+4 Building Blocks that Contribute Most to Well-being Among Workers

Research Question 1 asked which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers. Participants were presented with definitions of the PERMA+4 building blocks and were asked to choose which building block they felt was most important for their life satisfaction and job satisfaction based on their experiences. Within the sample, more than one building block emerged as important for life satisfaction and job satisfaction. To answer Research Question 1, my data analysis identified six themes that represent the most frequently mentioned building blocks in the dataset: (1) positive emotions contribute most to life satisfaction, (2) physical health contributes most to life satisfaction, (3) economic security contributes most to life satisfaction, (4) engagement contributes most to job satisfaction, (5) meaning contributes most to job satisfaction, and (6) accomplishment contributes most to job satisfaction. These findings provide insight into which

PERMA+4 building blocks contribute most to improving well-being among full-time workers based on their views and live experiences.

The Most Important PERMA+4 Building Blocks for Life Satisfaction

Three building blocks of well-being were described most frequently as the most important building block for life satisfaction: positive emotions, physical health, and economic security. Participants viewed each of these building blocks as highly influential in their lives and as an important foundation they needed to have the other building blocks of well-being.

Positive emotions contribute most to life satisfaction. Participants saw positive emotions as very influential in daily life. Participant 16, an operations manager, explained how positive emotions influence one's outlook, which in turn positively affects daily life:

...I think positive emotions, kind of controls your, your day-to-day life. It's something you know, that I breathe, something that you know, you got to continuously do. It's not just doing one day every minute, but you know, you want to make sure you, you want to kind of keep that positive mindset, positive energy every day. It'll just make you a more joyful person.

Participants also felt that experiencing positive emotions was necessary in order to have the other building blocks. Participant 6, an HR manager, explained, "...without like that positive emotional state, it's hard to show up for all the other areas." Participant 21, a graduate program director, also felt that her emotions affected how she views her life and her actions, including the other PERMA+4 building blocks:

.... what one is feeling inwardly readily affects their behavior and their actions outwardly and which effects, you know, all the rest of this [the other PERMA+4 building blocks].
So I think, you know, if I'm in a positive place, if I'm feeling, you know, if I'm happy

with my job and happy with my life, and you know, things are going well and I'm in a good place emotionally and mentally, then that's gonna feed into the rest of this.

Overall, the workers who viewed positive emotions as most important for life satisfaction saw them as a necessary foundation for the other building blocks of well-being.

Physical health contributes most to life satisfaction. Participants also described good physical health as an important foundation and necessary in order to have the other building blocks of well-being. Participant 15, an attorney, explained, “I feel like without my physical health, I can't do any of these other things.” Participant 18, an assistant principal, further elaborated on how their physical health affects their mindset, which in turn affects other building blocks of well-being:

When I feel physically healthy, everything else is...has a different mindset, or I have a different mindset. I'm more positive. I feel really, really good when I feel really, really healthy. And then everything else just kind of like those endorphins are going, and everything just kind of aligns for me...physical health. I think for me is like one of the building blocks that matter most to me because I.. when I feel good, I also give off a lot of positive energy and when I feel crappy, I know it and it affects my emotions and it also affects my relationships with others.

Another participant (13), a senior benefits analyst, emphasized how it's harder to address the other building blocks of well-being if you don't feel physically well:

I feel like physical health to me is like at the top of the tree or the diagram if I was drawing a chart and then everything else would kind of come after that because if, like, if I'm not, if I don't really have a good sense of my physical health, I'm more prone to

sickness, you know, or just random things that could happen that may negatively impact any one of these.

Overall, the workers who viewed physical health as most important for life satisfaction also saw it as a necessary foundation for the other building blocks of well-being in order to have life satisfaction.

Economic security contributes most to life satisfaction. Workers who viewed economic security as most important for life satisfaction felt that having financial security positively impacts every aspect of life. Participant 4, teacher assistant, explained how having economic security helps him meet his basic needs so that he doesn't have to worry:

...everything is easier with money and not having to worry about, like, if you're going to have a place to live because you're making rent or whatever... if you're worried about the roof over your head and like the food your family's going to eat, then like everything else has to fall apart even like your physical health sometimes because those things have to get paid.

Participants also talked about how having financial security enables them to live a more comfortable, enjoyable life and be independent. Participant 24, a product marketing manager, grew up poor and talked about how her lifestyle has changed now that she has money:

... I've worked really hard and my husband and I have worked really hard to make enough money so that we don't live like that. So like we actually live comfortable and go do what we want anytime we want. We can pay for gifts for friends or feed our friends, have a nice place to stay for our rent, like that sort of thing. So money buys happiness in my opinion for that one.

Participant 4 also felt that having financial freedom affords one to be able to enhance the other building blocks of well-being sharing:

...with some more money like you have more financial freedom to, like, move to a better place, like physically with your environment. You can pay for healthcare and medical procedures ...you have time to rest because you can pay out of your savings to like have a vacation, reset... take care of your emotions and things like that and also... get things that make accomplishing goals and maintaining like relationships and mental health a lot easier.

Overall, the workers who viewed economic security as most important for life satisfaction also saw it as a foundation needed to develop the other building blocks of well-being.

The Most Important PERMA+4 Building Blocks for Job Satisfaction

Three different building blocks of well-being were described most frequently as the most important building blocks for job satisfaction: engagement, meaning, and accomplishment. Workers viewed each of these building blocks as relevant to their work and most important for them to feel a sense of job satisfaction.

Engagement contributes most to job satisfaction. Workers who viewed engagement as most important for job satisfaction talked about how it makes their work more enjoyable and fulfilling. Participants felt being engaged at work was important because they enjoyed being challenged at work. Participant 14, a design consultant, described how being challenged mentally at work is important for him, "...that was a big one for me. Using my brain. Being able to use my skills, mental skills." Participant 24, a product marketing manager, also described being bored at a previous job because it was not challenging enough, and therefore, she experienced little engagement:

...Essentially, like all I was doing was being a secretary following up on tasks that weren't getting completed, and it got really boring really fast because I'm not necessarily one of those...I have to be challenging myself 100% of the time, but I would at least like to do something closer to my skillset... I was an admin assistant in similar positions for like 10 years, like I know I can do that. I would like to focus a little bit more on like project management, program management, not being a glorified calendar reminder.

In addition to being challenged, Participant 15, an attorney, described how being engaged also connects their work to their sense of meaning, making work more fulfilling:

I feel like being engaged in the project, you know, really helps me see that this is what I'm supposed to do and what I was made to do for my life and that I did the right schooling and that I'm, you know that I have the writing skills, the research skills. And, of course, you know, arguing skills, negotiation skills...and I feel like when I I'm always challenged every day, because there's, you know, different clients, different set of facts, different situations. No two cases are the same. So I'm always constantly challenging myself and when I'm able to complete that that...then I feel engaged. I feel fulfilled.

Workers also felt experiences of engagement lead to accomplishment and happiness. Participant 20, a senior enterprise account executive, shared that being engaged leads to accomplishment, "...if I'm using the strengths and the things that I'm really good at in my day-to-day role, that's where I feel accomplished." Participant 7 also explained how engagement and accomplishment work together to make her happy at work, "...I feel like those go hand in hand, because if I'm using my skillset and I fulfill or, you know, I check off my to-do list...I complete whatever project I successfully understand and excel at, you know, a certain task. Well, it makes me happy, you know?"

Overall, workers who viewed engagement as most important for job satisfaction talked about its connection to other building blocks of well-being (meaning, accomplishment, and positive emotions) and how it creates a more positive and fulfilling work experience.

Meaning contributes most to job satisfaction. Participants also felt having meaning at work was most important for them to have a sense of job satisfaction. Participant 21, a graduate program director, explained:

I need to feel like what I'm doing matters, and that's what's kept me here for so long. Because, you know, you can get a paycheck more or less, or you know it might be more, it might be less than other places...just knowing that I'm able to do what I do... the meaning of my work is immeasurable for me.

Workers who chose meaning as the most important building block for life satisfaction also described how having a sense of purpose and direction at work makes them feel passionate and more fulfilled. Participant 22, a systems engineer, explained why this is important, "I spend a lot of time at work, spending like 40 hours at least a minimum a week at work. So during that time, you want to have something that's kind of fulfilling and nothing that's like really draining or mundane." Participant 9, a registered nurse, provided an example of how helping others in her work gives her a sense of meaning and fulfillment that contributes to her sense of job satisfaction:

I get a lot of satisfaction in what I do. I am impacting people's lives. I'm helping. I'm a listening ear when things are stressful and when people are, you know, sick with COVID or they're out because of a personal health issue needing FMLA or a family member...that I get to be a part of that and to be helpful and caring and, you know, kind

of why I went into nursing is to take care of people and to help them during whatever stressful time they're going through, and trying to, you know, make things better.

Overall, workers who chose meaning as the most important building block for their job satisfaction felt that it was an essential element to feel a sense of fulfillment and satisfaction with their work.

Accomplishment contributes most to job satisfaction. Workers who viewed accomplishment as the most important contributor to job satisfaction felt that it contributed to a positive evaluation of their performance and a sense of ownership at work. Participant 10, a senior HR coordinator, explained, “Like that's the biggest thing for me to feel successful...is building those accomplishments or feeling that sense of accomplishment.” Participants also described how accomplishing things at work was an indicator of their work performance. Participant 5, a CEO, explained, “...accomplishing things means that...from an output perspective like me and my team are doing our jobs, and that affects work which, you know, helps make mindset clear.”

Participant 11, a marketing project coordinator, described how feeling accomplishment at work helps them feel on top of things and a sense of ownership over their work:

It's really key to be able to feel like you're on top of everything. That there's so much happening. It's you jumping into a rushing river that's already been going for years that you're trying to get a, get a bearing on everything. So for me to feel... accomplishment is such a huge thing because it shows that you're able to survive, you're able to really thrive in an environment and to really take ownership of the work that you're doing...That feeling accomplishment is such a big driving factor.

In addition, feeling accomplishment was also described as important because it creates a sense of pride and leads to appreciation from others at work. Participant 16, an operations manager, shared:

...when you accomplish something...it's not about getting kudos to me; it's more about feeling proud of the work that you've accomplished. It's about...you accomplish it, either by yourself or you accomplish it within the group of people. So, you know, recently we had an all-star meeting, and in the all-star meeting what we do is that we basically, we kind of celebrate all the wins, and when you know, we give an award to every team member, people that have been there five, six, 10 years, they all get different prizes. So, to me, for them especially, it's a sense of accomplishment and that's how I feel as well then you know...you need to feel you know that you achieve something and that you've been appreciated at work and that's the best way to do it.

Overall, workers who viewed accomplishment as the most important contributor to job satisfaction felt that it helps them feel successful in their work, gives them a sense of control and ownership, and generates pride and recognition from their coworkers.

Relationships Among the PERMA+4 Building Blocks

Research Question 2 asked what is the relationship among the PERMA+4 building blocks and how do they interact to improve well-being for workers? To answer this question, participants were presented with pairs of building blocks with the definitions on the screen and were asked whether the two building blocks were related based on their own experiences and to explain why. This question was repeated until every possible pair of PERMA+4 building blocks was shown to the participant (36 pairs in total). To answer RQ2, I identified 12 themes under four categories, as shown in Table 8. I framed the themes in terms of outcomes, but each theme

can also be interpreted in terms of antecedents. These findings provide insights into how the PERMA+4 building blocks interact to improve well-being based on the views and lived experiences of full-time workers.

Table 8.

Study 1 Research Question 2 Findings

Category	Theme
Positive emotions are an outcome of five building blocks.	<ul style="list-style-type: none">Positive emotions are an outcome of positive relationships.Positive emotions are an outcome of meaning.Positive emotions are an outcome of accomplishment.Positive emotions are an outcome of economic security.Positive emotions are an outcome of environment.
Accomplishment is an outcome of three building blocks.	<ul style="list-style-type: none">Accomplishment is an outcome of engagement.Accomplishment is an outcome of positive relationships.Accomplishment is an outcome of physical health.

Note: Themes were framed in terms of outcomes but can also be interpreted in terms of antecedents (e.g., positive relationships are an antecedent of positive emotions)

Positive Emotions are an Outcome of Five Building Blocks of Well-being

Participants viewed positive emotions as an outcome of five building blocks of well-being: positive relationships, meaning, accomplishment, economic security, and environment.

Positive emotions are an outcome of positive relationships. Workers felt that having positive relationships in their lives creates positive emotions. Participant 17, a systems engineer, explained:

I think positive relationships definitely bolster positive emotions. I think that no like person exists in a vacuum or can't exist alone for that matter and I think that, you know, not having positive relationships...it's very detrimental to just like everyday like well-

being because you won't really have...it's very hard to like sustain positive emotions without like positive relationships. So yeah, I definitely do think they correlate to like to a huge degree.

Participant 12, a realtor, further elaborated on how the quality of relationships has the potential to impact how you feel:

Positive relationships can impact positive emotions because people can make you, based on their feedback, can make you feel a certain way. But then a supervisor or a relative or a parent can make someone feel important based on the words they give them...what that individual means to them.

Other participants talked about how their positive relationships at work also create positive emotions for them. Participant 11, a marketing project coordinator, shared how feeling valued and communicating with others at work positively affects him:

So having the positive relationships of feeling valued or just having that communication with somebody else really does affect how I positively feel. Like I definitely see there being a connection here. And I can see, during my worktime, we have more work huddles where at the end of the day, we kind of just talk and we're just doing our own busy work and during these conversations we talk about ourselves. We talk about what's happening at work. And by being able to quote-unquote vent a little bit, I'm able to feel much more positive about my environment and how to tackle the day.

Participant 3, a peer review research specialist, shared an example of how having a positive relationship with her manager at work positively impacts her emotions:

So for work, I'm like in direct contact with the director constantly or really weekly, at least, because she's really busy. But most of the time, I will just like let her know what I

accomplish, and then ... she'll even ask me things for ... help or support, and then if I support her, she'll say, "Thank you so much. Thank you so much for doing this." Stuff like that. And that makes me happy because, you know, she's just giving you positive reinforcement, and I'm doing a good job. So that makes me feel happy. So I definitely think I have a pretty positive relationship with her... and then her letting me know that just makes me feel important.

Some participants also felt that the nature of their relationships affects their emotions because of how much they value relationships in their personal lives or at work. Participant 2, a people operations director, explained:

... like one of my personal values is to feel valued in the relationship that I have with someone whether it be personal or professional... I feel like for me, I always will experience...just like moments of like appreciation or gratitude for like the small things. ..I've learned that like looking at the small things like, wow, like I ... took care of this item that was on my to-do list or you know, I had a really good meeting that I led...when it happens, it just feels like a sense of like pride or accomplishment or achievement.

Participant 15 further explained how because she values relationships, those relationships affect her positively or negatively depending on how they are going:

I've always been a social person. You know, college everything, and I also...I think for you know, for me, one of my love languages is quality time. So if you have positive relationships, you know, you have the quality time, then I think that will elicit positive emotions...that's very important to me.

Finally, participants also felt that negative relationships can hinder their positive emotions.

Participant 15, an attorney, further explained, "I try to maintain a lot of friendships, new and old,

and also for my family too... If something's not right in in my family or with my friends, then it does, you know, negatively affect me because it's very important for me." Participant 9, a registered nurse, also shared, "Well, I think if you have a relationship that's not positive, it's directly going to affect your emotions. If you are in an abusive relationship, I don't expect that you will have a lot of positive emotions."

Overall, workers felt that positive relationships create a range of positive emotions in both their personal and professional lives, especially for those who highly value their relationships. In contrast, negative relationships have a negative impact on their emotions.

Positive emotions are an outcome of meaning. Workers also felt that having meaning leads to positive emotions. Participant 18, an assistant principal, explained that knowing your purpose positively affects your emotions, "... when you know what your purpose is, when you're not feeling aloof, and you actually.. even if you stray from whatever journey you're on but if you kind of have an idea of what you're doing, then you're going to feel good about it." Participant 19 explained how achieving something meaningful feels good:

Because if you like have something that gives you meaning, like say school. "Hey, I passed my class. Oh, I feel awesome. Oh, I got an A. I feel awesome, you know? I passed my exam. I got my certification. I feel awesome. I could do it." ... makes you feel good.

Participant 13, a senior benefits analyst, explained how having purpose and direction creates direction in one's career and creates positive emotions:

... I really sat down and looked at what is my purpose in life and what am I passionate about and then tried to kind of pull my career into those two things and drive forward. And so, that sense of purpose and knowing the direction I wanted to go with my career definitely helped pulled some positive emotions in when I found that. Like, I kind of took

a break from HR and did health coaching for a while... and that was really meaningful and a lot of... I'd stand up from like a coaching call and be like, "Oh my god, I love my job." And then kind of merging my past with my present and going forward that direction of, you know, keeping some of my HR stuff and my benefits, but also really focusing on well-being and keeping that health coaching stuff going forward, too.

Workers also discussed experiencing the specific positive emotions of pride, happiness, gratitude, and joy. Participant 21, who works in higher education, shared how having meaning at work creates a sense of pride for her:

...I do find meaning in my work...the public health workforce needs to be strengthened, and I have a direct role in doing that...So I find a lot of meaning in that, and I, I'm proud of that, you know.... I find a lot of meaning in that because I persevered, and I've, you know, really worked hard to show them that... And because of the pride, I find my job fulfilling, which affects my emotion...gives me a more positive feeling and satisfaction in my job.

Participant 17, a systems engineer, explained how meaning creates feelings of gratitude and joy:

I think that just like having, particularly just like gratitude and just like having a sense of purpose, gratitude, and like knowing that you're not almost...like the days aren't like going by...not passively living because you have a sense of purpose and because you have like a sense of direction and ... I think that just like having that sense of meaning that just influences having gratitude for life and having joy when you hit specific like achievements because that's something that you set out to do.

Other participants felt that meaning creates positive emotions through the experience of accomplishment at work. Participant 3, a peer review research specialist, talked about how reaching a goal aligned with her purpose and made her feel, "...when I was like working towards graduating, that was just like, essentially my sense of purpose. So once I reached that I was just like, really happy." Participant 3 also shared how accomplishing work in line with her meaning makes her happy:

So like, I feel like the work that I do is like super important because obviously, you know, it's cancer-related and then we're trying to do these...we're trying to push these trials out as fast as we can to get all these clinical trials started. So it makes me happy... when I'm able to like accomplish those things during work.

Workers also talked about how this sense of accomplishment relates to other building blocks of well-being. Participant 8, a business owner and artist, shared how having a sense of direction at work leads to feelings of accomplishment, which then positively impacts her mindset, creating positive emotions, "I definitely feel like when I have little, like, planning sessions for work or...I feel like I've accomplished something that definitely gets me in like a much better like mental mindset to enjoy things more like other unrelated things." Participant 2, a people operations specialist, felt that meaning affects positive emotions through recognition of her accomplishments from others:

... I will say the one that I correlate with very closely would be having a sense of purpose or meeting in an organization, you know, being recognized for efforts. It doesn't always have to be assigned to a compensation increase or a bonus. Those things are nice, but like when I'm able to see the meaning and the things I'm doing and how my contributions show up. I ultimately have a positive like emotion...work kind of transforms into just like

I'm getting up and I'm doing something what I'm passionate about versus like, oh, I gotta get up and go to work.

Participant 18, an assistant principal, felt that her sense of meaning affects how she feels about herself, impacting her emotions. She explained, "... when we don't know where we are in life or we're going through a hard time, that does affect how we feel about ourselves. That's also the energy that we give off to other people. And it's noticeable...I feel like they are highly correlated." Participant 15, an attorney, described how having direction makes her feel good because she feels like she is working toward something, "Definitely... I've always been very, I guess you know, goal-oriented, purpose-driven. And I think that what [sic] I feel my best when I'm working toward something or that I feel like I have a purpose in life. So yeah, definitely, definitely. Those two relate." Participant 23, a project manager, shared how they derive meaning from growing and learning: "I typically tend to feel happiest when I'm still growing and learning and pursuing something, and so that's how I would associate it with it. Like if it's still something I'm passionate about...I'm gonna continue to learn and challenge myself, and that's what kind of ties into the positive emotions for me." Finally, participants also talked about how a lack of meaning can negatively influence their emotions. Participant 20, a senior enterprise account executive, explained, "I can tend to get like ...in a hole in the sense of like, when I have no purpose and I feel like my life is pointless and directionless, and when I say that like workwise...that's when all my emotions start going down the drain...that's where it bleeds into my personal life and my relationships with people."

Overall, having meaning feels good for workers, creating emotions like pride, happiness, gratitude, and joy, while negative relationships have a negative impact on their emotions. Meaning leads to positive emotions because knowing your purpose and achieving something

meaningful feels good. Having a purpose creates direction and a sense of working toward something in one's career, positively affecting how workers feel about themselves.

Positive emotions are an outcome of accomplishment. Full-time workers also felt that accomplishment creates positive emotions. Participants described feeling happiness, gratitude, pride, and joy after their accomplishments. Participant 10, a senior HR coordinator, explained, “These, for me, are very strongly related just because a lot of my happiness comes from when I feel like I've accomplished something. And it doesn't necessarily mean like it's just a small task, but for me...I've set goals for myself in my life, and when I hit them to meet those and continue to succeed, that's when I feel best.” However, Participant 12, a realtor, explained that for him, the happiness from achieving was in the short term, “But they can be short-term as well. I mean, we always hear about people accomplishing something and working hard and accomplishing something, and then they'll have that, that feeling of happiness for a limited amount of time.” Participants also described feeling pride. Participant 23, a project manager, shared, “Probably I think the happiness, but also it's more so like pride. Like feeling prideful and feeling like a sense of...just pride in myself...just showing myself that I'm capable and able to do it, you know, and continuing to like move forward.” One participant (18), an assistant principal, described how accomplishing something also leads to feeling joy and gratitude:

So when I do something well, it helps me to not just feel good, like give me personal joy, but it actually is...like a flywheel or like a steam engine, and it, like, pushes me even further. You know, like a flywheel. It starts off really hard to pedal and you're not making any movement, but when you start to push and push and push, eventually, it moves really fast on its own. And so the same thing here where once I feel like I've accomplished

something, then there's like this sense of gratitude and joy that I've done it and especially if I'm being recognized for it.

In addition, workers cited several other reasons why experiencing accomplishment leads to positive emotions, such as the positive feedback they receive from others. Participant 18 also shared how receiving recognition from others for her accomplishment created positive emotions, “...having that recognition be put in writing by people really gives me a sense of joy because I'm reading that, and so I feel good being acknowledged for it.” Participant 6, an HR manager, explained how she felt after receiving positive feedback from leaders, “I've been in my new job now for five or six months, so I'm feeling like I'm seeing my accomplishments now, you know, and we're getting ready to launch our program next month, and I'm getting like really positive feedback from my leaders... I definitely feel great when that happens.” Participant 9, who works in healthcare, described receiving positive feedback from other employees on her accomplishments:

... when you do something that you feel good about or, you know, when you get positive feedback from an employee like, "Thank you so much for helping me. You made such a difference." That's not why you go into nursing to get the accolades, but you know, ...you feel good that somebody recognizes that you've tried and... that they have appreciation for what you've done.

In addition, workers talked about how their achievements made them feel good about themselves. Participant 20, an account executive, shared how her achievements contribute to the value she sees in herself at work, “So even like this week, I had two deals that closed. Tiny, but like they absolutely help and they impact my mindset...the value that I see myself in my employment.” Participant 24, a product marketing manager, explained how accomplishments

make her feel better about herself and more confident at work, "...if you like actually achieve what you're trying to...like experiencing mastery...it's gonna make you feel.. make you feel happier. It's gonna make you feel more ...Make you feel better about yourself. Confidence."

Other participants also talked about how accomplishments impact their mindset. Participant 16, an operations manager, explained, "... if you accomplish something, that's going to help out your mindset. It's gonna make you ...feel proud of yourself. So they do actually go 101% hand by hand." Finally, participants also talked about how a lack of accomplishment can create negative emotions. Participant 16 also shared, "Now... on the other hand, if it's not an accomplishment, it'll be a disappointment and that will be a negative emotion. So, I would say that...the opposite end will be if you're not positive, you'll be negative."

Overall, experiences of accomplishment feel good for workers, creating emotions like pride, happiness, gratitude, and joy, while a lack of engagement can create negative emotions. Accomplishment leads to positive emotions through positive feedback from others, helping workers feel good about themselves, positively impacting their mindsets, and making them feel a sense of progress at work. Certain conditions also help accomplishment create positive emotions: meaningful accomplishments and when there are no challenges at work to take away from feeling positive emotions.

Positive emotions are an outcome of economic security. Workers also felt that having economic security creates positive emotions. Participant 23, a project manager, described how financial security enables happiness, but only up to a certain point:

I mean, obviously finances.. financial security is important. I think that as a society, we place more value on it...then we should but...it's because we need to survive. But I do think that there is a certain level that people think that... they're gonna, you know,

eventually reach it's going to make them happy. And I think this ties more into like also your mindset...there's a level of like financial security that you can be at that you can actually manage and feel, you know, like make a living off of and then after.. everything after that fact is like comfort, you know? And so, I think there is a cap to it.

In addition to happiness, participants talked about other positive emotions. Participant 12 talked about feeling gratitude for the things his economic security allows him to do, like supporting loved ones:

...if you have an economic security it does give you gratitude...if you have a sick parent and ... you come to terms with the fact that they cannot live on their own anymore... would you rather place them and take the chances and cut corners and put them into a retirement home that you don't know anything about or would you rather have a financial means to ... provide them with a live-in aide in their own home? You know? And so we always say, "Well, money doesn't mean everything," but when it comes to things like that. You want to ...revisit that statement. It doesn't only mean having a big house and taking great vacations and stuff like that. It's like by having resources, you can better serve those that are in need in your life that you care about.

Participant 6, an HR manager, explained why feeling economically secure gives her a sense of inner peace:

I've been through times in my life, especially when I was younger; you know that I was a single mom, and it was more of a struggle, and so yeah, definitely... as I have more financial stability and security ...it's more of a peace. So it's not so much like happiness, gratitude, joy, but I would say it's, it's a lot of inner peace just to...not have to be spending a lot of energy on those things and then I can spend my energy on other things.

Participants also felt that having economic security removes stress and worry. Participant 4, a teacher assistant, explained, "I feel like economic security gives a lot of positive emotions because, at the very least, it cuts like a significant amount of stress in my experience. Like I am very happy when I have economic security." Participant 17, a systems engineer, elaborated:

I like the quote, "It's very hard to just have positive emotions when you don't know where your next meal is coming from." And just like having that financial security to at least like meet your base needs just to make sure you won't, like, go hungry tomorrow or ...you're not at risk of, you know, having to go default on loans or ...just like having that economic security. I think that is...one of the most important indicators of whether you'll have positive emotions or not.

Similarly, workers felt that having financial security also provides a sense of safety and security. Participant 21, a graduate program director, explained that economic security makes them feel safe, "I think that being secure economically makes... emotionally in terms of having that stability makes you feel, you know, safe, and it makes you feel good knowing that you can provide for your family and your children." Participant 24, a product marketing manager, elaborated:

Economic Security is absolutely tied to how happy you can be because it buys you a sense of security. You know you're gonna get fed every day, you know you're gonna have somewhere safe to sleep, you know you're going to be able to do things you enjoy without having to worry if you're not gonna be able to pay the light bill kind of thing.

Participants also talked about how having money makes life easier. Participant 18, an assistant principal, explained, "...so I think when you have money, and I'm not saying money solves

problems, but it just makes things easier, and so like I can fully meet my needs..." He elaborated on how he can do more with money:

Money will not save you from death. But it will make your life a lot easier... if you had money, you could plan to go on vacation whenever you wanted. You could just say alright, my car broke down, let me get another car. How am I gonna afford to pay for a car? How am I gonna afford to make a payment? Can I even buy a car? If you had money...oh, if I want the house, let me get it...But if you had economic security, you can do a lot of things.

In addition, Participant 1, a data analyst, felt that having economic security provides a sense of freedom:

...not having to worry about money... I do feel positive because of that because that gives me the freedom to decide what I'm doing with my livelihood with my work and allows me to focus more on what I want to do rather than what I feel I have to do in order to afford my lifestyle.

Other participants felt that economic security can affect their positive emotions but that it depends on the person. Participant 23, a project manager, explained that economic security can create positive emotions, but probably not as much compared to someone who doesn't have economic security, implying that it depends on one's income level:

I think it is. It is definitely tied together, but I wouldn't say it would be at the top of the list...you know, what would create positive emotions for me necessarily. I prioritize probably more like fulfillment and like mindset and like other things like that...but then again, that might be cuz I'm not in a bad financial state and maybe a person in a bad financial state would say otherwise.

Finally, participants also described how a lack of economic security can prevent positive emotions. Participant 2, a people operations director, explained, “... if something were to happen, do I have three months of salary available to cover expenses? And if not, how do I get there? You know, if I don't, and you know, you get a layoff or whatever the case may be, those positive emotions will probably quickly sink.”

Overall, workers felt that economic security creates feelings of happiness, gratitude, and inner peace and a lack of economic security can prevent positive emotions. For workers, having economic security removes stress and worry, provides a sense of safety and security, and makes life easier. Other participants felt that economic security can create positive emotions, but it also depends on individual characteristics like income level, how much one values money, and how one values and prioritizes financial security amidst other circumstances in one's life, such as relationships.

Positive emotions are an outcome of environment. Workers also felt that their work environment creates positive emotions. When describing the positive emotions they felt in an optimal work environment, participants talked about happiness, gratitude, joy, and peacefulness. Participant 24, a product marketing manager, explained, “I feel like they can be because naturally, it's gonna make you feel better. Being safe is gonna make you happier.” Participant 21, a graduate program director, also shared how she feels happy when safe:

... because I enjoy being in that space... I like the fact that I have the physical environment to ... foster this, and I think they do it specifically to put us in a better, you know, mental state and ... feel, you know, comfortable and happy and safe and just enjoy being in that work environment.

In addition to happiness, Participant 1, a data analyst, talked about feeling a sense of gratitude for having an optimal work environment," I think my work environment does make me feel...a lot of gratitude and happiness." Participant 6, an HR program manager, talked about other positive emotions. "I definitely feel like a sense of peace and joy... I'm like, "Okay, I'm heading to work," and I just walked down the stairs, you know. It's my, my little space and it's enjoyable. You know, I look forward to coming to work in the morning that way. In addition, participants talked about why a good environment at work creates positive emotions. Participant 12, a realtor, felt that an optimal work environment helps enhance productivity:

... to have your environment reflect you as a person and make you feel at home...I realize that you have to create an environment that is not only aesthetic but in a feng shui, a kind of a sense, if you will, it has to be aligned to you. It has to be aligned with you to a certain degree in order for you to stay at one place for a long period of time, stay put. So it's good to have pictures of your family around and or your children or vacations or your goals or your plants and all that stuff or whatever type of environment that you're looking for that does you good. Anything that keeps you working at a high enough level for a longer period of time and enjoying being in that environment. I think it can affect your overall quality of work and you and your attitude.

Participants also described how being able to create an optimal work environment at home helps them enjoy their work. Participant 6, an HR program manager, explained:

... so like, I am so happy with the whole work-from-home situation, you know, since COVID... I'm in this downstairs den and I have a beautiful deck and trees out there, a river, and a bike trail. And you know, and I do enjoy like having beautiful things at my

office...I feel so much better than, like, being at the office in a cubicle. That was not good for me.

Participant 3, a peer review research specialist, talked about feeling more comfortable in a home workspace with more physical space and natural light:

... we do have a physical office that's very small. So I think it's like, it's smaller than the room that I have now. And then there's like...three desks. There is no natural lighting, and I won't be able to see anyone, and I'm just in a tiny room. So, luckily, we don't have to go to the office. And then being at home. I have natural lighting. I can open the blinds whenever I want to. I can also turn on the AC whenever I want to or heater if I need to. So yeah, the environment definitely affects my emotions.

Finally, Participant 2, a people operations director, talked about the joy of having an optimal work environment at home with access to nature:

So I purposely when we designed this house, I put four windows in here and it gives a lot of natural sunlight. I try to avoid having the actual lights on in this office, by all means, unless I'm working really late...Sometimes I'll sit outside and just listen to the birds chirp or you know, just look at the animals and try to predict like what are they doing in their day? So absolutely, that just brings the natural joy and bliss, and it feels very privileged to be able to settle in that moment and enjoy the environment around you.

Overall, workers felt that a work environment with access to nature, natural light, and safety creates positive emotions like happiness, gratitude, joy, and peacefulness. Workers felt that having an optimal work environment enhances productivity. In addition, remote workers appreciated the opportunity to work from home, where they could create a more optimal work environment with space, light, and access to nature.

Accomplishment is an Outcome of Three Building Blocks of Well-being

Participants viewed accomplishment as an outcome of three building blocks of well-being: engagement, positive relationships, and physical health.

Accomplishment is an outcome of engagement. Full-time workers saw accomplishment as an outcome of engagement. Participants felt that engagement helps them accomplish and experiencing it can also feel like an accomplishment. Many participants felt engagement helps them achieve. Participant 4, a teacher assistant, shared, “I think it's easier to accomplish things when you're fully engaged because, like, you have all your tools at your disposal, and you're, like, actively thinking about all of them.” Participant 14, a design consultant, further explained, “I feel like I'm not going to get to mastery if I'm not using all my strengths and paying attention, or else you're not gonna get to that top 1% level of whatever I'm trying to do.” Participant 11, a project coordinator, elaborated:

I think, you know, accomplishment is usually achieved by being engaged. If you want to master something and you want to achieve something significant, it's likely going to require your dedication and attention. So I think there's more of a unilateral relationship here where engagement drives accomplishment.

Participant 3, a peer review research specialist, also shared:

...when I'm in my state of flow... it's gonna allow me to accomplish all my tasks and stuff like that. Let's see. During work, we use Excel a lot and we just have to be really knowledgeable in the different types of formulas that we use, the tables, yada yada yada. And that just basically means I really need to turn on my brain because sometimes, because just remembering how to do all these things...it's pretty important for my work. And I think I basically just zone out, and I'm able to complete the work. Sometimes it's

pretty hard too ... when I'm in my state of flow and when I'm just like in the zone, it just like allows me to accomplish these tasks.

Other participants described feeling a sense of accomplishment because they were engaged.

Participant 20, a senior enterprise account executive shared, “So for me if I'm helping people... if I'm using the strengths and the things that I'm really good at in my day-to-day role, that's where I feel accomplished.” Participant 15, an attorney, provided an example from her work experience, describing how feeling engagement while collaborating with others makes her feel accomplished:

I went to school for a while, and I've developed my practice, and I do feel like being engaged with the clients, being engaged with, you know, with my coworkers, completing tasks together because I have, you know, assistants, and we have big projects that go out. We have, you know, teams, attorneys that helped me, and when we're doing closings, especially, there's a bunch of different people that were engaged, and we're completing the task together, and I do feel a sense of accomplishment.

Overall, workers felt that being engaged leads to more accomplishments. Some workers viewed engagement as something that helps get to accomplishment and others described how experiencing engagement feels like an accomplishment.

Accomplishment is an outcome of positive relationships. Workers also viewed accomplishment as an outcome of having positive relationships, citing several reasons: (1) encouragement from positive relationships helps accomplishment, (2) recognition from others helps accomplishment, (3) positive relationships enhance feelings of accomplishment, (4) feeling supported by others helps accomplishment, and (5) positive relationships are an accomplishment.

Some workers felt that receiving encouragement from others helped them to accomplish.

Participant 2, a people operations director, explained her point of view using a metaphor, “... you're running a marathon and you get the folks that love you the most staying at the finish line cheering you on.” Participant 23, a project manager, described how encouragement can help overcome self-doubt:

I think that there's been a lot of times where I've doubted myself and I think that like having positive relationships really is like where it helps you kind of know that you're, you're gonna achieve it and it helps you kind of provide that emotional support to push ...to get yourself to those accomplishments and you know, that you'll get there eventually, but they definitely are closely tied together where you feel that encouragement that you sometimes need.

Participant 19, a program manager, shared an example of how encouragement can be helpful:

My wife is always by my side, you know, pushing me. So yeah...there's a big difference. When you have somebody saying, "You're gonna pass. I know you're gonna pass." When you have someone who's by you saying, "Oh, I don't think you're gonna pass. You're not ready." It's a big difference, you know?

Other participants described how recognition from others helped them feel a sense of accomplishment. Participant 21, a graduate program director, shared, “Yes, I feel a sense of accomplishment when somebody comes and tells me, you know, well done [Name] and provides that. Absolutely.” Participant 21 elaborated, “Yeah, I mean, it's huge when you accomplish something and especially if the relationship you have with others is in a positive light. I feel that if I do something small and people are kind of reacting to that and I'm able to see that, I feel supportive there and it feels good.” Other workers felt positive relationships help enhance

feelings of accomplishment. Participant 17, a systems engineer, explained, "I think it's easier to feel accomplished...if the relationships in your life are positive, and it's easier to feel like you achieve something if you have those positive relationships." Participant 2, a people operations director, elaborated:

...those positive relationships... they really like shine light on to the different accomplishments. I think they also help you see it for what it is. Like I experienced, you know, going through like a tough time not being able to celebrate the accomplishments for sure, but like, having those positive relationships around me, you know, through my boss and through my friends and family are like, "Hey, this is a pretty big achievement. You should be excited and celebrate that for yourself.

Participants also felt that feeling supported makes it easier to feel accomplished. Participant 3, a peer review research specialist, described how positive relationships help people support each other to achieve a common goal:

... sometimes at work I obviously cannot do everything by myself or I don't have like the authority to do some certain things where I would need like my director to have a say in it. So I think just where it gives us a space where we can... support each other to just go towards the common goal.

Participant 9, a registered nurse, described how having a good boss also helps make accomplishment easier:

Anyway, she's amazing. She is of the opinion that you do your job, you come to me if there's anything you need, otherwise go do it. She is very much not a micromanager, that she's there for the support whenever necessary. And she is a good cheerleader. She champions us and it makes me want to do a good job. You know, because I think ...a

good employee with a good manager, you make your manager look good because ...they've given you that leeway to do a good job. And you know, I have so much appreciation and respect for her, you know, I want to do a good job and, you know, be a good reflection on her leadership. And she gives us opportunities to learn and grow and do things and yeah, that's been really, really great.

Participants also felt that positive relationships can be a helpful resource at work that leads to accomplishment. Participant 4, a teacher assistant, explained, "So I feel like it's very useful to have positive relationships to like just help you get where you need to go like knowing the right people to use those resources." Participant 3, a peer review research specialist, explained how good relationships with coworkers helps her achieve goals at work:

So being able to have a positive relationship with your coworkers, or like with their director or study team, it allows me to...get like faster responses from certain people... so that's where the positive relationship grows in that and then it just allows us to accomplish the same goal that we want to do, which is like, you know, just to keep the study going along.

Having supportive mentors at work is another important resource for accomplishment.

Participant 12, a realtor, shared his experience:

... early in what I was doing, I needed mentors... I needed to learn from people who had already accomplished what I was doing. And without having a positive relationship with folks showing that I appreciate their time and helping me come up, you know, without those folks that I would probably not be where I am today. So, in order to accomplish things, you do need people, and you do need positive relations because they might have something that you need.

Finally, having positive relationships was also viewed as an accomplishment in and of itself. Participant 4 explained, “I think positive relationships kind of is an accomplishment. So, like, that can help people feel accomplished, like being just a part of something, and then your relationships are..like they go a long way.”

Overall, workers saw having positive relationships as something that helps them accomplish both in their personal lives and at work for a variety of reasons. Encouragement, recognition, and feeling supported by others help accomplishment. Having positive relationships also enhances feelings of accomplishment and can be viewed as an accomplishment.

Accomplishment is an outcome of physical health. Workers described being in good physical health as something that leads to more accomplishment. According to participants: (1) you need to be in good physical health to accomplish, (2) good physical health improves focus, (3) physical health is a source of accomplishment, and (4) poor physical health will prevent accomplishment.

Participants felt that being in good physical health was necessary to accomplish anything because good physical health is needed to take action. Participant 15, an attorney, explained, “You can't do anything if you're not healthy. Participant 12, a realtor, elaborated,”... that's your vehicle, you know. If you can't sit in a desk longer than 10 minutes you can't be productive. If you can't walk, if you can't do a physical task that requires you to accomplish something, you can't really be as productive as you want so.” Participants also felt that being in good physical health helps them to achieve more because it improves focus. According to Participant 8 (a business owner and artist), “just in terms of taking care of myself, I'm more able to focus, and so I guess that's related to doing better work.” Participant 15 concurred, “...whenever I am in a good physical state, I feel like I can, you know, achieve more, do better at my job, more focus.”

Physical health was also described as a source of accomplishment. Participants described feeling accomplished when they are physically healthy. Participant 9, a registered nurse, explained:

When I am at my more maximal physical health, I do feel a sense of accomplishment.

Okay, yeah, you know, done the right things to take care of myself and I prioritize myself. That's...the problem right now. I'm not prioritizing myself and I need to. But when I do, I will feel accomplished.

Participants also talked about feeling accomplished when they achieve goals related to maintaining their physical health. Participant 1, a data analyst, explained, “Maybe you set physical goals for yourself. Maybe you wanted to run a marathon or something. For me, to a certain degree, I think managing my physical health is and staying as healthy as I have is an accomplishment in and of itself.” Participant 5, a CEO, provided another example:

I have a Tonal at home... it's like a Peloton, but for strength training. It tracks all your metrics all the time, and I am like way too invested in all of my stats on what I do on Tonal, and when I like complete something like a milestone...it feels freaking great. So taking care of myself and having a strong physical shell is, yeah, I get accomplishment probably from that.

Participants also felt that being in poor physical health prevents accomplishment. According to Participant 6 (an HR manager), “...physical health is my core foundation, so I'm not going to have as many accomplishments if I'm not feeling well. Participant 13, a senior benefits analyst, further explained:

...if I don't feel well...I'm just not in the mindset of having that achievement. I'm like, well again, I can kind of push it off to the next day, or you know if you have to take a long time out of work or something like that, but you're not accomplishing work tasks

that you used to be able to. I think your well-being and it takes a dive. So yeah, I would say those are connected for me.

Overall, being in good physical health helps workers feel accomplished.

Workers saw feeling physically well as an important foundation for achieving success, which also improves focus. Being in good physical health was also viewed as an accomplishment.

Workers also viewed poor physical health as a barrier to accomplishment.

Moderators or Enablers that Help the PERMA+4 Building Blocks

Research Question 3 asked if there are moderators or enablers that help the PERMA+4 building blocks improve well-being for workers. During the interview, participants were asked to identify what conditions in their life or at work that they felt can help the PERMA+4 building blocks improve both life satisfaction and job satisfaction. To answer RQ3, three themes were identified in my analysis: (1) having work-life balance enables PERMA+4 to improve life satisfaction, (2) having work-life balance enables PERMA+4 to improve job satisfaction, and (3) having a supportive leader enables PERMA+4 to improve job satisfaction.

Having work-life balance enables PERMA+4 to improve life satisfaction. Having work-life balance emerged as an important enabling condition for PERMA+4 to enhance life satisfaction among workers. Participants talked about several aspects of work-life balance they felt were important: (1) Taking breaks from work, (2) having the flexibility to take care of personal needs, and (3) having childcare. Participant 6, an HR manager, explained why work-life balance is important to her after experiencing a lack of it when she was younger:

I did not have a good sense of that balance, you know, and I actually neglected a lot of other areas of my life and was like very overly focused on work and so you know, things with relationships can suffer, health can suffer. I actually had a lot of stress when I was

younger at work and so I just feel like that's something I've worked on, you know, in my life like I still care about accomplishment and success...but not at the detriment of my life.

Participants also talked about the importance of taking breaks from work. Participant 22, a systems engineer, shared, "...currently I do get quite a bit of time off, but it doesn't hurt to get more. Just, you know, so you can take more personal days and have more work-life balance and take more time for yourself in a positive way." Participant 18, an assistant principal, talked about the importance of relaxing through time off, "so I think time is like a big important piece where we also give our self that time to relax and just kind of take a moment of like, take a beat, to breathe." Another participant (14), a design consultant, talked about the importance of taking time to do activities other than work, saying, "So disengaging from just doing something else that's not work. Like obviously like a weekend. You can't work all the time.... balancing time away from work in conjunction with working. Even if you love a job, you should still not do it 24/7." Participant 15, an attorney, viewed taking time off as a way to practice self-care:

...just taking time out, not taking it so seriously all the time and just, you know, giving yourself that self-care, the oxygen that you need. You know, when I was working with a therapist and they had said, you know, before you can do anything else... if you're in the plane and there's no oxygen you have to put your own oxygen mask on first or else you can't help anybody else. So to me that's important is the self-care aspect, you know, a balance.

In addition to time off, participants also talked about the importance of having the flexibility to take care of personal needs. Participant 6, an HR manager, shared why she thinks flexibility is important:

I mean for me personally, like just having some flexibility in my life, like not feeling like I have to be chained to my desk, you know, from 8 am to 5 pm every single day. I cannot step away you know, I can't you know, do something that I need to do for me like to go out and take a walk when I need to... I have to take care of all my needs first.

Finally, having childcare was also described as an important condition. Participant 4, a teacher assistant, talked about the importance of having childcare:

...if you have a non-school aged child or child who goes to school half-day like I think people kind of assume that everybody has, like family, or like grandparents or something who can watch your kid and like a lot of people don't. I feel like childcare should be either something that we are given in life or by our work for free because then we can work and also our children are taken care of. That would be extremely helpful for like life satisfaction.

Overall, when workers were asked what conditions in their work or life could enhance the positive impact of PERMA+4 on their life satisfaction and job satisfaction, they described different aspects of work-life balance. These findings imply the importance of work-life balance as an enabling condition that can help PERMA+4 improve life satisfaction.

Having work-life balance enables PERMA+4 to improve job satisfaction. Workers also cited having work-life balance as an important enabling condition for PERMA+4 to improve job satisfaction. Participants described several aspects of work-life balance they felt were important: (1) taking breaks from work to help manage stress, (2) balancing work and personal life to maintain a sense of control, (3) having flexibility at work to accommodate personal needs, (4) having stable childcare, and (5) having work-life boundaries. Participants talked about the

importance of taking breaks from work to help them manage stress. Participant 15, an attorney, explained:

I think emphasis should be on giving yourself breaks...The thing is like in my office, my office manager makes sure that everyone's taking their days off that they're given. Take your days off, give yourself a break, don't work through your lunch, you know? We try to have people focus on their self-care, which I think, you know, it's not just physical health, because the self-care, you know, is also the mental load. You know, we're in a very stressful environment, just taking a time out, asking for help... not always being, you know, so goal-oriented. Take a few minutes and take a time out.

In addition, maintaining that balance between work and personal life was also described as giving a sense of control in one's life. Participant 2, a people operations director, shared how it's not only important to not spend too much time at work but also to make sure her personal life doesn't interfere with work:

I feel like a lot of times I feel anxiety or, you know, more emotion mostly driven when I feel like one or the other kind of have more control over me. Like for instance, I feel like I'm just coming out of this, like, four-week period where, you know, I was in multiple weddings in the last month, which were tied to external events on every single weekend, and I felt like I didn't have a good control over my personal life and it was kind of eating away at things that I wanted to do at work because I was spending more time in another avenue. So now that ... everyone's married now, I'm able to kind of come back to equilibrium and I feel good about my well-being and more steadily paced.

In addition, participants talked about the importance of having flexibility at work to accommodate personal needs. Participant 21, a graduate program director, explained:

So we have that flexibility which helped tremendously with you know, younger children. But even before that, before the world of any type of remote work, I had a boss that understood that, you know... I need to take the day off, and I need to stay home. And she'd be "no problem. Do what you got to do." You know so having that understanding and that flexibility has helped tremendously in terms of job satisfaction. And again, one of the reasons why I've been with this organization for so long.

Participant 21 gave an example:

... in June, we're going to be spending three weeks in California because my brother is getting, you know, just getting worse, and we don't know how much time he has. So we want to spend time out there. And so you know, I talked to my boss, and I said look, I want to spend ...an extended amount of time in LA this summer. So, you know, we're planning on being there for three weeks. And she was like, "Okay, I understand. What do we need to do to?" Knowing that I'm also the only person doing my job right now... she's like, "Okay, well, put together a schedule, like what days you can, like, log on for a couple of hours here and there." You know. So that's what we're doing.

Another participant (8), a business owner and mother, talked about how a lack of stable childcare can interfere with work:

... like childcare and like all the associated mental health headspace that's like, filled up by child-related stuff is just such a, it's such a constant little thing in the back of your head that it is also a sort of unknown, which is really frustrating. Like, you can have a whole work week planned, or you know, and then it just completely falls completely to nothing if your kid is sick... or if the kids have a day off that you didn't have on the calendar or, you know, all of a sudden the water main breaks and the kids are home from

school at 11 o'clock. Like that kind of stuff happens constantly and it's very disruptive to your work life.

Finally, Participant 1, a data analyst who works from home, also talked about being challenged without boundaries between his work and home life:

Yeah, work-life balance is a big one... but it's an interesting dynamic when you think about what does work-life balance for somebody who works in an office space versus somebody who works like me, where there's a lot of overlap between your work and your life anyways and like maybe, sometimes, maybe there's a little too much balance between work and life where you don't ever get a chance to kind of decompress, so to speak.

Overall, workers talked about aspects of work-life balance that they felt were important enabling conditions, such as taking breaks, maintaining a sense of control, having the flexibility to take care of personal needs, having childcare, and having boundaries between life and work. These findings highlight the importance of work-life balance as an enabling condition that can help PERMA+4 improve job satisfaction.

Having a supportive supervisor enables PERMA+4 to improve job satisfaction.

Having a supportive supervisor is another theme workers discussed as a condition at work that helps PERMA+4 improve job satisfaction. Participants described several behaviors they felt were characteristic of a supportive supervisor: 1) supports the well-being of their followers, (2) develops and mentors those they lead, (3) shows appreciation, (4) leads by example, (5) communicates effectively, (6) and builds trust.

Participants talked about the importance of having a leader who supports the well-being of their followers. Participant 13, a senior benefits analyst, explained that for PERMA+4 to improve well-being, supervisors need to buy into the importance of employee well-being and

play an essential role in supporting the well-being of their employees, “that leadership kind of buy-in and support...are you able to get what you want as an employee from any of that well-being stuff.” Participant 10, a senior HR coordinator, further explained how leaders at work need to create a supportive work environment for those they lead in order to support their well-being:

So there's that balance of, you know, stuff has to get done at work but you also have to create that environment where people want to come to work and want to do well. So it's always, it's really important for me to be, you know, “I'm here for you, but there are some rules that you need to follow. But if you ever have questions or don't like something or don't understand something like I don't want you to be afraid to come and speak about those and ...if you need time to do something.” And I believe in mental health days and all that kind of stuff, so... just thinking about the environment that you want to have as a manager or as a person and like providing that for other people, but also thinking, you know, you have to be able to talk to your employees and ask them, “what kind of environment do you need to be successful and how can I create that for you?”

Participants also described a supportive supervisor as someone who develops and mentors those they lead. Participant 20, a senior enterprise account executive, explained how having mentorship enables her to develop her other PERMA+4 building blocks: “I have good mentors who I feel are helping me work towards accomplishment and having meaning and having a positive relationship with people. Another participant (18), an assistant principal, provided an example, describing her manager:

...she builds capacity in others. And I think that that's a big piece is when you can build capacity in others. Because then you are doing, you are building other leaders and that's in itself is a strong leadership skill. But when you are building capacity in others, you're

helping to take the load off of you too...and you're also saying, "Hey, I see these strengths in you." So you're building that excitement in others...you're helping, and you're furthering their skill sets.

Participants also felt that supportive managers were also effective communicators. Participant 18 also talked about how a good leader is transparent, physically present for those they lead, and their words are consistent with their actions:

I think visibility is so important. Transparency is super important. Strong communication skills and being super supportive. But when you are visible as an educator, or an administrator, as a leader, you need to be the face of a school. You need to be seen in the classrooms. You need to be out there doing the work like everybody else, you know? And when somebody is not doing that...it doesn't matter how nice you are; it can build resentment, and then it can impact other things. So for me, like leadership and like a school culture that comes from the leader though is important. Like you could have a mission and a vision for your business, for your hospital, for your anything, for any job. But if the leadership isn't there if the leader is not.. if they are not practicing what they're preaching, if they're not walking the walk and talking the talk, then it doesn't matter to me.

Another aspect of effective communication is providing candid feedback. According to Participant 20:

Like they have your best interest at heart, but they'll be real with you, and they're there to look out for you. So it's working in tandem. It's building a partnership. It's having the relationship because they want to see you succeed. And even if that means, "Hey, you know what we need to redial on this strategy like this is not working" or "Hey, you need

to pick it up a little bit. This is... where you're lacking." That, for me, is that leadership again, that tough love.

In addition, expressing appreciation to others was another characteristic that was brought up as being one of a supportive manager. Participant 16, who oversees operations in the hospitality industry, explained:

...as a manager...you go, and you let them know, "Hey, by the way, good job on table 71."...a pat on the back, and that makes, you know, it goes a long way. So you want to kind of build that, you know, you want to build that bonding, you want to build that positive energy...I think that having a strong leader or a strong core of management affects 100% the job.

Effective communication involves not just talking but also listening to employees to understand what they need. Participant 4, a teacher assistant, explained, "I would say they need to listen more to like people on the ground of what their like programs need and what needs to be funded...just like just like listening better to the resources that are needed." The importance of having a manager who also delegates and leads by example was another characteristic that was described as one of a supportive leader. Participant 16 explained:

... you can't just bark orders. You have to delegate. When you delegate, you also have to lead by example...I cannot tell you, "Hey, by the way you can't be on your phone when you're in the dining room," but then I'm on the phone all the time because you know, obviously that doesn't look right or doesn't look good. So, as a leader, as a manager, I have to make sure that I do lead by example. So having that, you know, that mindset is important.

Finally, building trust was also cited as important. Participant 9, a registered nurse, talked about how a supportive supervisor should place trust in the competence of their employees: "... to be treated like an adult who has skills and competence and a work ethic to where, you know, that I'm trusted to do my job. That's really big." Participant 20 talked about the importance of establishing a personal connection that enables trust, "...for me, like, having a personal connection and feeling comfortable with that person is really important. Participant 22, a systems engineer, shared another characteristic of a trusting supervisor, "being able to show or present ideas that could help move a project or company forward without any like backlash or repercussions."

Overall, workers talked about different supportive behaviors that they felt were important for a good supervisor: supporting well-being, developing and mentoring, showing appreciation, leading by example, effective communication, and building trust. These findings highlight how having a supportive supervisor is an important enabling condition at work that can help PERMA+4 improve job satisfaction.

Summary of Study 1 Findings

Altogether, the qualitative findings from Study 1 provide rich and descriptive insights into how full-time workers perceive, think about, and experience the PERMA+4 building blocks of well-being in their lives and at work and how they contribute to their sense of life and job satisfaction. Table 9 provides a summary of the Study 1 findings.

Table 9

Summary of Study 1 Findings

Research Question	Themes	Summary of Participants' Views
RQ1: Which PERMA+4		Reasons:

<p>building blocks or combinations of building blocks contribute most to improving well-being among workers?</p>	<p>The most important PERMA+4 building blocks for life satisfaction:</p> <p>Positive emotions contribute most to life satisfaction.</p> <p>Physical health contributes most to life satisfaction.</p> <p>Economic security contributes most to life satisfaction.</p>	<p>Positive emotions positively influence one's outlook on life and daily actions.</p> <p>Being in good physical health is a necessary foundation for the other building blocks.</p> <p>Having economic security: (1) enables a comfortable and enjoyable life, (2) prevents worry & stress.</p> <p>Reasons:</p> <p>The most important PERMA+4 building blocks for job satisfaction:</p> <p>Engagement contributes most to job satisfaction.</p> <p>Meaning contributes most to job satisfaction.</p> <p>Accomplishment contributes most to job satisfaction.</p> <p>Positive emotions are an outcome of five building blocks:</p> <p>Positive emotions are an outcome of positive relationships.</p> <p>Positive emotions are an outcome of meaning.</p> <p>Positive emotions are an outcome of accomplishment.</p> <p>Reasons:</p> <p>Engagement is important because: (1) it's nice to feel challenged, (2) it makes work more fulfilling, (3) it helps accomplish.</p> <p>Meaning makes you feel (1) more passionate about work, (2) more fulfilled at work.</p> <p>Accomplishment: (1) makes you feel on top of things, (2) gives a sense of control and ownership (3) creates pride, (4) leads to appreciation from others.</p> <p>RQ2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve the well-being of workers?</p> <p>Positive relationships are: (1) valued, (2) positively impact how you feel, (3) make you feel valued, (4) make you happy, (5) negative relationships negatively impact emotions.</p> <p>Having meaning: (1) makes you feel pride, happiness, gratitude, and joy, (2) helps you accomplish, (3) positively affects how you feel about yourself, (4) a lack of meaning negatively impacts emotions.</p> <p>Experiencing accomplishment (1) makes you feel happiness, gratitude, joy, and pride, (2) makes you feel good about yourself, (3) makes you feel more confident, (4) positively impacts your mindset, (5) makes</p>
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		you feel a sense of progress, (6) a lack of accomplishment creates negative emotions.
Positive emotions are an outcome of economic security .		Having economic security: (1) makes you feel happiness, gratitude, and peacefulness, (2) allows you to do more, (3) removes stress and worry, (4) provides a sense of safety and security, (5) makes life easier, (6) provides a sense of freedom, (7) makes you happy up to a certain income level, (8) a lack of economic security can prevent positive emotions.
Positive emotions are an outcome of environment .		An optimal work environment: (1) makes you feel happiness, gratitude, joy, and peacefulness, (2) makes you feel safe, (3) makes you more productive, (4) helps make work enjoyable when you can create an optimal work environment at home.
Accomplishment is an outcome of three building blocks:		Reasons:
Accomplishment is an outcome of engagement .		Engagement: (1) helps accomplish and (2) can feel like an accomplishment in and of itself.
Accomplishment is an outcome of positive relationships .		Having positive relationships: (1) helps accomplishment through encouragement, recognition, and support from others, (2) can enhance feelings of accomplishment, (3) can be an accomplishment.
Accomplishment is an outcome of physical health .		Good physical health: (1) is needed to accomplish, (2) improves focus, (3) can be an accomplishment, (4) poor physical health prevents accomplishment.
RQ3: Are there moderators or enablers that help the PERMA+4 building blocks improve well-being for workers?	<u>Enabling condition for PERMA+4 to improve life satisfaction:</u>	<u>Participants Talked About:</u>
	Having work-life balance enables PERMA+4 to improve life satisfaction.	(1) taking breaks from work, (2) having the flexibility to take care of personal needs, (3) having childcare.
	<u>Enabling conditions for PERMA+4 to improve job satisfaction:</u>	<u>Participants Talked About:</u>

<p>Having work-life balance enables PERMA+4 to improve job satisfaction.</p>	<p>(1) taking breaks from work to help manage stress, (2) balancing work and personal life to maintain a sense of control, (3) having flexibility at work to accommodate personal needs, (4) having childcare, (5) having work-life boundaries.</p>
<p>Having a supportive supervisor enables PERMA+4 to improve job satisfaction.</p>	<p>A supportive supervisor: 1) supports the well-being of their employees, (2) develops and mentors others, (3) shows appreciation, (4) leads by example, (5) communicates effectively, (6) and builds trust.</p>

Note: For RQ2, the themes were framed in terms of outcomes but can also be interpreted in terms of antecedents (e.g., positive relationships are an antecedent of positive emotions)

Study 1 Discussion

The findings from Study 1 provide insights into how the PERMA+4 building blocks improve SWB from the perspectives and lived experiences of full-time workers. More specifically, they provide a deeper understanding of which PERMA+4 building blocks contribute most to improving workers' well-being, the relationships among the building blocks, and what enabling conditions help PERMA+4 improve workers' well-being.

Research Question 1 asked which building blocks or combination of building blocks contribute the most to the well-being of workers. This study found that three building blocks of well-being were described most frequently as the most important building block for life satisfaction: positive emotions, physical health, and economic security; where participants viewed each of these building blocks as highly influential in their lives and as an important foundation they needed to be able to have the other building blocks. This finding is consistent with the meta-analysis and MASEM I conducted (see A Systematic Literature Review of the Empirical Literature on PERMA and PERMA+4) that also found positive emotions to be a significant predictor of life satisfaction with the largest effect size. The findings also align with previous research that found positive emotions, health, and financial satisfaction to be associated with SWB (Diener et al., 2018). Previous research, however, also indicates that the association

between income and SWB may only exist up until a certain point where, at higher incomes, there is not as strong a relationship (Jebb et al., 2018). Although I did not ask participants about their income, their job titles suggest that most are entry to middle management level, which implies that the average income of the sample may not be exceptionally large and, therefore, economic security may have been more critical among participants in this sample. Surprisingly, positive relationships was not among the top three building blocks that emerged as most important for life satisfaction, even though social relationships have been found in previous research to be a strong predictor of SWB (confirm review citation, e.g., Argyle, 1999; Myers, 1999; Margolis et al., 2021; Geerling & Diener, 2020). One reason for this may be due to the context and approach of this research. When I asked participants which of the building blocks they felt was most important for life satisfaction and job satisfaction, I showed them all nine of the PERMA+4 building blocks and asked participants to choose which one they felt was most important for well-being based on their perspectives and lived experiences. It may be that when comparing the positive relationships building block to the other eight, it may have been considered important to participants but not as important when compared to positive emotions, physical health, and economic security.

For the outcome of job satisfaction for Research Question 1, three different building blocks of well-being were described most frequently as most important: engagement, meaning, and accomplishment. This finding is consistent with previous research on PERMA that found engagement to be the most strongly correlated building block with job satisfaction (Kern et al., 2014) and research that found flow to be a strong predictor of job satisfaction (Maeran & Cangiano, 2013). Meaning has also been found to be strongly correlated with job satisfaction in one PERMA study among teachers (Dreer, 2021). However, another PERMA study only found it

to be moderately correlated and the least strongly correlated PERMA building block among school staff (Kern et al., 2014). This finding is also consistent with PERMA research that found accomplishment to be strongly correlated with job satisfaction (Dreer, 2021; Kern et al., 2014). However, when Kern et al. (2014) conducted a regression that included a model with all of the PERMA building blocks, they found that only positive emotions and relationships were significant contributors to job satisfaction and engagement, meaning, and accomplishment were not significant. In addition, Dreer (2021) also found that only positive emotions, relationships, and accomplishment were significant contributors to job satisfaction and engagement and meaning were not significant based on a regression analysis. It is possible that these three building blocks emerged as most important because they were seen as most directly relevant to having a positive experience at work among the workers in this sample.

Research Question 2 asked how the building blocks are related to one another and interact to improve well-being. This study identified positive emotions and accomplishment as outcomes of other building blocks. Study 1 found many workers perceived and experienced relationships among specific building blocks. Participants viewed positive emotions as an outcome of five building blocks: positive relationships, meaning, accomplishment, economic security, and environment. This finding suggests that workers view these five building blocks as ones that create experiences of positive emotions for them. They also described accomplishment as an outcome of engagement, positive relationships, and physical health, suggesting that workers view these building blocks as necessary to be able to accomplish. Overall, these findings about the relationships workers view among the building blocks are consistent with COR theory and the concept of research caravans, which describes how resources tend to be linked and work

together rather than exist individually in isolation (Hobfoll, 2011) and can be applied to the PERMA+4 building blocks to explain how they work together to improve well-being.

Research Question 3 asked if there are moderators or enabling conditions that help the PERMA+4 building blocks improve well-being for workers. This study found that based on the perspectives of full-time workers, having work-life balance is a condition that can enhance the ability of PERMA+4 to improve both life satisfaction and job satisfaction. When asked what conditions in life or at work could enhance the positive impact the PERMA+4 building blocks have on their life and job satisfaction, participants described different aspects of having work-life balance: the importance of balancing their work and personal lives, taking breaks from work, having the flexibility to take care of personal or family needs as needed, having childcare, and having boundaries between work and life, which came up as especially important for people who work from home. A number of studies have demonstrated that having work-life balance contributes to both life satisfaction and job satisfaction and that it plays an important role in well-being (Sirgy & Lee, 2018), although in my review of the PERMA and PERMA+4 literature, there were no studies that looked at moderators of the relationship between PERMA or PERMA+4 and SWB or included work-life balance as a variable. In addition, another finding of this study was that workers felt having a supportive supervisor at work was another important enabling condition that can help enable PERMA+4 to improve job satisfaction. When asked what conditions in life or at work could enhance the positive impact the PERMA+4 building blocks have on their job satisfaction, Participants described the importance of having a supportive supervisor at work who supports their employees' well-being, develops and mentors, shows appreciation, leads by example, communicates effectively, and builds trust. This finding aligns with the literature on perceived supervisor support (PSS), which describes the extent to which

workers believe their supervisor cares about their well-being and values their work contributions (Eisenberger et al., 2002). Although PSS can conceptually be considered one specific type of positive relationship, it is a distinct construct that specifically focuses on an employee's perception of their direct supervisor and how much they value the employee's well-being and work contributions, while the positive relationship building block is based on broader feelings of being valued and supported overall. PSS is also conceptually distinct from the construct of overall PERMA+4, so it is appropriate to investigate PSS further as a potential moderator of the relationship between overall PERMA+4 and SWB. Fewer studies have looked at the relationship between PSS and SWB compared to the literature on work-life balance and SWB, but PSS has been found to be positively associated with job satisfaction (Kalliath et al., 2020) and life satisfaction (Newman et al., 2015). It has also been found to moderate the negative association between work-family conflict and life satisfaction among employed caregivers, where this relationship was only significant when PSS was low (Li et al., 2015).

Study 1 Conclusion

The exploratory qualitative findings from Study 1 answer Research Questions 1 to 3 as well as provide detailed examples and stories that contribute to a better understanding of PERMA+4 from the viewpoint of workers. However, another aim of this dissertation is to be able to generalize a deeper understanding of PERMA+4 and SWB to full-time workers which is a limitation of qualitative research (Creswell, 2007). Therefore, to further investigate, the findings from Study 1 will be tested quantitatively in Study 2 with a larger sample of full-time workers.

Chapter 4: Study 2

The aim of Study 2 is to quantitatively test the findings from Study 1 to be able to generalize the findings to full-time workers. Based on the findings of Study 1, this study will test the following research questions and hypotheses summarized in Table 10.

Table 10

Study 2 Hypotheses

Research Question	Hypotheses
RQ1: Which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers?	H1: Positive emotions, physical health, and economic security will be the strongest significant positive predictors of life satisfaction among the PERMA+4 building blocks. H2: Engagement, meaning, and accomplishment will be the strongest significant positive predictors of job satisfaction among the PERMA+4 building blocks.
RQ2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve the well-being of workers?	H3: Positive relationships will be a significant positive predictor of positive emotions. H4: Meaning will be a significant positive predictor of positive emotions. H5: Accomplishment will be a significant positive predictor of positive emotions. H6: Economic security will be a significant positive predictor of positive emotions. H7: Environment will be a significant positive predictor of positive emotions. H8: Engagement will be a significant positive predictor of accomplishment. H9: Positive relationships will be a significant positive predictor of accomplishment. H10: Physical health will be a significant positive predictor of accomplishment.
RQ3: Are there moderators or enablers that help the PERMA+4 building	H11: Work-life balance will be a moderator that positively enhances the positive relationship between PERMA+4 and life satisfaction.

blocks improve well-being for workers?	H12: Work-life balance will be a moderator that positively enhances the positive relationship between PERMA+4 and job satisfaction.
RQ4: Does PERMA+4 predict improved well-being for workers over time?	H13: Perceived supervisor support will be a moderator that positively enhances the positive relationship between PERMA+4 and job satisfaction.
	H14: PERMA+4 (T1) will be a significant positive predictor of life satisfaction (T1)
	H15: PERMA+4 (T1) will be a significant positive predictor of job satisfaction (T1)
	H16: PERMA+4 (T1) will be a significant positive predictor of life satisfaction (T2)
	H17: PERMA+4 (T1) will be a significant positive predictor of job satisfaction (T2)

Note: For RQ4, T2 is two weeks after T1

Study 2 Method

Participants & Design

To test the hypotheses, I conducted a two-wave panel study with a two-week lag. To analyze the data, I conducted cross-lagged panel modeling using path analysis to control for all of the relationships among the predictor and outcome variables at each time point, including autocorrelation in this longitudinal data, which allowed me to test the hypothesized direction and magnitude of these relationships between the predictor and outcome variables as well as assess potential bidirectionality across the two time points to provide a more comprehensive view of the interrelationships among variables and determine which directions are most likely (Berrington & Sturgis, 2006). Path analysis was also used due to the data violating the assumptions of homoskedasticity and multivariate normality for linear regression, which indicated that path analysis using a robust method of estimation (Maximum Likelihood estimation with Huber-White robust standard errors) was needed to adjust for heteroscedasticity and since violations of normality can increase the possibility of Type I error (Tomarken & Waller, 2005). This type of

“shortitudinal” research design also used a shorter time lag to account for a continuous change process between predictor and outcome variables when variables are stable across time (Dormann & Griffin, 2015, p. 489) to capture the dynamic nature of SWB, which is subject to short-term fluctuations (Stone & Mackie, 2013). In addition, studies have demonstrated that positive psychology interventions can improve SWB in shorter periods of one to two weeks (Emmons & McCullough, 2003; Seligman et al., 2005). The temporal separation between measuring predictors and outcomes also helped minimize common method bias (Podsakoff et al., 2003).

Since the goal of Study 2 is to generalize Study 1 results to the population of full-time workers in the United States, participants for Study 2 were recruited from a different source than Study 1 (Creswell & Clark, 2017). Convenience sampling was used to recruit study participants from Prolific. To qualify for the study, participants had to meet the following inclusion criteria: 1) be 18 years of age or older, 2) reside in the United States, 3) work in the United States, 4) be employed full-time, 5) have a direct supervisor at work, 6) have at least one coworker. Participants were paid \$2.00 after completing each survey (\$4.00 total) as compensation for participating in the study. Before data collection, I conducted power analyses to determine the minimum sample size needed for the planned statistical analyses. I conducted a power analysis in R using the semPower package (v2.1.0; Moshagen & Bader, 2023) based on the degrees of freedom in the planned models ($df = 482$), an RMSEA of 0.05, a power requirement of 0.80, and a significance level of $\alpha = 0.05$ yielding a minimum sample size of 70 in order to determine model fit. However, to ensure an adequate and robust sample size with sufficient power after participant attrition, removal of inattentive participants, and data cleaning, I recruited more

participants than required to take the T1 survey ($n = 500$). Two weeks later, 433 participants took the T2 survey (86.6% of the initial sample).

I then conducted independent t-tests to compare the participants who completed both surveys with those who completed only the first survey to determine if there were significant differences between the two groups regarding the study variables and demographics. For demographics, participants who only completed the first survey were slightly younger ($M = 34.46$, $SD = 9.40$) than those who completed both surveys ($M = 39.03$, $SD = 10.02$; $t = -3.50$, $p < .001$) and slightly less educated ($M = 4.28$, $SD = 1.18$) than those who completed both surveys ($M = 4.63$, $SD = 1.26$; $t = -2.16$, $p < .05$) but there was no significant difference in income. For the categorical variables of gender and race/ethnicity, I conducted comparisons using Chi-square tests of independence and confirmed no significant difference in gender and race/ethnicity between the two groups. For the study variables, independent t-tests confirmed no significant differences in scores for PERMA+4, the individual building blocks, life satisfaction, job satisfaction, work-life balance, and perceived supervisor support.

I removed 16 participants who did not meet the inclusion criteria, did not pass two attention checks, and completed the survey too fast at less than 2 seconds per item (DeSimone et al., 2015), yielding 417 participants. I then cleaned the data in preparation for data analyses and the use of demographics as control variables. I removed five participants whose gender was non-binary or “prefer to self describe” and six participants who identified their race/ethnicity as “prefer to self describe” or “prefer not to say” due to the small numbers of participants in these categories. The final dataset included 406 participants.

Participants were full-time workers with ages ranging from 19 to 70 ($M = 39.36$; $SD = 10.10$). A slightly larger percentage of participants identified as women (women = 51.7%, men =

48.3%). Most of the participants identified their race/ethnicity as White/Caucasian (n = 278; 68.5%), followed by Asian/Asian American (n = 58; 14.3%), Black/African American (n = 37; 9.1%), Hispanic /Latino/a/x (n = 24; 5.9%), and American Indian/Native American /Alaska Native (n = 9; 2.2%). Most respondents had a Bachelor's degree (n = 174; 42.9%), followed by a graduate or professional degree (n = 108; 26.6%), some college but no degree (n = 52; 12.8%), an Associate's or technical degree (n = 39; 9.6%), a High school diploma or GED (n = 32; 7.9%), and some high school or less (n = 1; 0.2%). Participants worked in a variety of industries, with most in healthcare/social assistance (n = 65; 16%), followed by education/educational services (n = 52; 12.8%), and information/information services/data processing (n = 37; 9.1%). Finally, participants reported an income ranging from less than \$25,000 to more than \$250,000, with most participants reporting an income category of \$50,000 to \$74,999 (n = 109; 26.8%).

Procedure

A study description was posted on Prolific for people who were prescreened by Prolific to meet the inclusion of living in the United States, working full-time, and has a direct supervisor. The study description included a study overview and compensation details while preventing clues to the studies' aims to avoid participant self-misrepresentation (Zhou & Fishbach, 2016; Aguinis et al., 2021). Before data collection, I pre-tested the survey with three volunteers recruited from my personal network. Participants who completed the first survey (T1) were invited on Prolific to complete the same survey two weeks later (T2). After the launch of each survey in Prolific, I initially recruited 20 participants to take the survey and asked for their feedback on the survey through an open-ended item and reviewed their data to ensure that the surveys worked correctly and were clear and understandable (Aguinis et al., 2021; Kees et al., 2017).

Qualtrics, an online survey software platform, was used to collect the data. In each survey, participants were first asked to complete an informed consent form and provide their Prolific ID, which was automatically filled in. To minimize social desirability bias, participants were told in the survey instructions that their responses will be confidential and were asked to respond honestly. They were then asked to fill out a questionnaire consisting of scales that measured the study variables. They first completed scales measuring the outcome variables to prevent ordering effects that can influence how they evaluated their SWB, starting with life satisfaction (since it is more general) followed by job satisfaction (since it is more specific to the work domain) (Diener et al., 2018). Next, they completed scales measuring the predictor, moderator, and control variables, including items asking for demographic information (e.g., age, gender, education level, income) and information about their job (e.g., role, industry, organizational tenure). To minimize ordering effects, the items within all scales were randomized. To minimize participant inattention and check for bots, two attention checks were also included in the survey. The attention checks were embedded in the scales and asked participants to select a specific response option. To ensure participants did not complete the survey more than once, participants were prevented from submitting multiple responses in Qualtrics. Throughout the survey, participants also had the option to opt out of the survey at any time to ensure their comfort and perceived fairness (Aguinis et al., 2021). All participants received payment in Prolific after completing each survey. See Appendix A for all survey measures and items.

Measures

Participants completed all measures at T1 and T2. Reliabilities (Cronbach's alpha) for all scales are reported in the Results section (see Table 10) and survey items can be viewed in Appendix B.

Life Satisfaction

Life satisfaction was measured using the Satisfaction with Life Scale, a widely used measure of life satisfaction (SWLS: Diener et al., 1985). Respondents were asked how much they agree with each statement on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example item was, "In most ways my life is close to my ideal." The scores from items were added to form an overall score of subjective well-being, where higher scores indicated higher levels of subjective well-being.

Job Satisfaction

Job satisfaction was measured using a six-item short version of the Job Satisfaction Index (Brayfield & Roth, 1951) developed by Ogho et al. (1992). Respondents were asked how much they agree with each statement on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). An example item was, "I feel fairly well satisfied with my present job." Item scores were added to form an overall score of job satisfaction, where a higher score indicated a higher level of job satisfaction.

PERMA+4 Building Blocks

The 29-item Positive Functioning at Work Scale (PF-W: Donaldson & Donaldson, 2020) was used to measure overall PERMA+4 and each of the nine PERMA+4 building blocks of well-being (positive emotions, engagement, relationships, meaning, accomplishment, physical health, mindset, work environment, and economic security). The PF-W has demonstrated a nine-factor

structure and criterion, convergent, divergent, predictive, and incremental validity with well-being and work performance measures (Donaldson & Donaldson, 2020). Items were rated on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Example items included “I feel joy in a typical workday ” (positive emotions), “I lose track of time while doing something I enjoy at work” (engagement), “I receive support from others when I need it” (relationships), “My work is meaningful” (meaning), “I set goals that help me achieve my career aspirations” (accomplishment), “I typically feel physically healthy” (physical health), “I believe I can improve my job skills through hard work” (mindset), “there is plenty of natural light in my workplace” (environment), and “I am comfortable with my current income” (economic security). All scores were averaged to form an overall score for PERMA+4, where a high score indicates a high level of overall PERMA+4. Scores for each of the nine individual PERMA+4 building blocks were also averaged to form a score for each building block.

Work-life Balance

There are many conceptualizations and approaches to defining work-life balance in the research literature, some of which are multidimensional and complex (Sirgy & Lee, 2018). To operationalize work-life balance in this study, I selected a simple unidimensional and holistic measure based on participants’ overall satisfaction with their ability to meet work and personal/family demands (Valcour, 2007). A five-item scale developed by Valcour (2007) was used to measure work-life balance. Respondents were asked how satisfied they were with different aspects of their work-life balance using a 5-point Likert-type scale ranging from 1 (very dissatisfied) to 5 (very satisfied). An example item was “the way you divide your attention between work and home.” Scores were averaged to form an overall score of satisfaction with work-life balance, where a higher score indicated a higher level of satisfaction.

Perceived Supervisor Support

Perceived supervisor support is the extent to which employees view their supervisor as supportive in terms of valuing their contributions and caring about their well-being (Eisenberger et al., 2002). A four-item scale was used to measure perceived supervisor support that was adapted from the Survey of Perceived Organizational Support (Eisenberger et al., 1986) using the same approach as previous studies where “organization” was replaced by “supervisor” (e.g., DeConinck, 2010; Eisenberg et al., 2002; Maertz et al., 2007). This four-item scale was used by DeConinck & Johnson (2009). Participants were asked how much they agree with each statement using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example item was, “My supervisor really cares about my well-being.” Scores were added to form an overall score of perceived supervisor support, where a higher score indicated a higher level of perceived supervisor support.

Demographics Variables

Participants were also asked to self-report their demographic information of age, gender, income, education level, and race/ethnicity, which were used as control variables because they have been identified as predictors of SWB in prior research, although with mixed results (Diener et al., 2018). For age, participants were asked to provide their age in years in an open-ended item. To report their gender, participants were asked to select from the following options: "Man," "Woman," "Non-binary," and "Prefer to self-describe" (open-ended). To report annual income, participants were asked to select from the following income ranges in US dollars: Less than \$25,000. \$25,000-\$49,999, \$50,000-\$74,999, \$75,000-\$99,999, \$100,000-\$150,000, \$150,000-\$250,000, and more than \$250,000. To report education, participants were asked to select from: “Some high school or less,” “high school diploma or GED,” “some college, but no degree,”

“Associate’s or technical degree,” “Bachelor’s degree,” or “graduate or professional degree.” To report race/ethnicity, participants were asked to select any of the following that applied: “American Indian/Native American/Alaska Native,” “Asian,” “Black/African American,” “Hispanic/Latino/a/x,” “Pacific Islander/Native Hawaiian,” White/Caucasian,”” prefer to self describe,” and ”prefer not to say.”

Study 2 Results

All data analyses were conducted using R software (Macintosh Version 2023.12.0+369; R Core Team, 2023). The Ltm package (v1.2-0; Rizopoulos, 2022) was used to calculate Cronbach’s alpha. The R statistical (R Core Team, 2023), Hmisc (v4.8-1; Harrel & Dupont, 2023), Performance (v0.10.0; Lüdecke et al., 2023), and RobustHD (v0.8.1; Alfons & Eddelbuettel, 2023) packages were used for data cleaning. The apaTables package (v 2.0.8; Stanley, 2021) was used to create the correlation matrix and the Lavaan package (v.0.6-17; Rosseel et al., 2023) was used to conduct the confirmatory factor analysis (CFA), measurement invariance testing, and cross-lagged panel model path analyses, and structural invariance testing.

Data Cleaning and Preliminary Analyses

First, I used Microsoft Excel to prepare the data and remove 16 participants who did not meet the inclusion criteria of working in the United States and having at least one coworker and who exhibited signs of participant inattention. To screen for participant inattention, I removed participants who completed the survey in less than two seconds per item and did not pass two attention checks (DeSimone et al., 2015). I also reviewed the answers to an open-ended item asking for job title to ensure consistency between T1 and T2, which was consistent for all participants. I then combined the data from T1 and T2 using participants’ Prolific IDs. The variable of gender was dummy coded in Qualtrics before data collection.

Next, I used R software to clean the data and conduct the preliminary data analyses. First, I cleaned the data in preparation for the use of demographics as control variables. I removed five participants whose gender was non-binary or “prefer to self describe” and six participants who identified their race/ethnicity as “prefer to self describe” or “prefer not to say” due to the small numbers of participants in these categories. There were 406 participants in the final dataset.

I then reviewed descriptive statistics to identify missing data for the study variables and determined there was no missing data. I then conducted linear regressions to test the stability of the control variables across time points with T1 control variables as predictors of the same T2 control variables. Age ($R^2 = .99$), gender ($R^2 = .97$), education ($R^2 = .95$), race/ethnicity ($R^2 = .97$), and income ($R^2 = .83$) were stable over time and T1 control variables were used in the subsequent analyses. For race/ethnicity, I reviewed descriptive statistics and determined that the number of participants in the race/ethnicity categories other than White were individually too small to be used as controls, so I dichotomized race/ethnicity into two categories: White and BIPOC (Black, Indigenous, and people of color).

Next, I reverse coded one item for job satisfaction and scored the items for all study variables. I then identified 33 univariate outliers for T1 and 23 univariate outliers for T2 that were more than three standard deviations from the mean. Rather than remove these outliers, I windsorized them setting extreme scores to either the lower or upper limit of three standard deviations from the mean to reduce their influence. I then identified 12 multivariate outliers in T1 and 12 in T2 using Mahalanobis distance with a chi-square significance cut-off of 0.01. I windsorized these outliers by replacing them with vector values that represented the closest point on the boundary of an ellipsoid that was computed using a median-based approach to data centroid identification (since the data was multivariate normal) and was defined by all points

with a squared Mahalanobis distance equal to the 99th percentile of a chi-square distribution (Khan et al., 2007). Windsorsizing, rather than removing the large number of outliers (55 in total), allowed me to maximize statistical power for the analyses and maintain the data structure.

I then tested the assumptions for conducting linear regression. First, I assessed univariate normality for each variable by reviewing descriptive statistics and confirmed the data had a normal distribution (with skew less extreme than ± 3.00 and kurtosis less extreme than ± 10.00). Next, I confirmed univariate linearity by reviewing correlations and scatterplots for the study variables. I then tested for multicollinearity by calculating the Variance Inflation Factor (VIF) for each predictor variable, which were less than five, indicating no multicollinearity. For the CFA and each hypothesis, I then conducted the Breusch-Pagan test for homoscedasticity, and it was significant, indicating the data was heteroscedastic. I also conducted the Henze-Zirkler test of multivariate normality and found the data was not multivariate normal. The heteroskedasticity and non-multivariate normality of the data indicated that a robust method of estimation was needed. Therefore, to test the hypotheses, I used path analysis with a robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic to adjust for heteroskedasticity and the violation of multivariate normality, which can increase the likelihood of Type I error (Tomarken & Waller, 2005). Due to these assumption violations in the data, I also conducted the CFA using robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic. In addition, I used cross-lagged panel modeling using path analysis to test the hypotheses. This allowed me to control for all potential relationships among the predictor and outcome variables at each time point and test the hypothesized direction and magnitude of the relationships between the predictor and outcome variables across time points (Berrington & Sturgis, 2006).

Descriptive Statistics and Correlation Matrix

Descriptive statistics, Cronbach alphas, and correlations among all study variables can be found in Table 11. As expected, each of the PERMA+4 building blocks was positively significantly correlated with one another with mostly moderate and some large correlations, but none above .81, confirming no issues with multicollinearity. Overall, PERMA+4 and each of the PERMA+4 building blocks were also positively and significantly correlated with the outcome variables of life satisfaction and job satisfaction with large correlations for overall PERMA+4. In addition, overall PERMA+4 and each of the PERMA+4 building blocks were also positively significantly correlated with the moderator variables of work-life balance and perceived supervisor support. However, the correlations were not as strong as those with the outcome variables. All the scales demonstrated good reliability, except for the subscale for Environment, which had the lowest Cronbach's alphas, slightly under what is considered acceptable (T1 $\alpha = .59$, T2 $\alpha = .62$).

Table 11

Means, Standard Deviations, Cronbach Alphas, and Correlations Among Study 2 Variables (N = 406)

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
T1																																	
1. Age	39.36	10.10																															
2. Income	3.58	1.38		.19**																													
3. Education	4.67	1.23		-.04		.39**																											
4. PERMA+4	4.97	0.97	.94	.12*	.28**	.20**																											
5. PE	4.59	1.62	.93	.09	.22**	.18**	.86**																										
6. Engagement	5.22	1.15	.78	.21**	.19**	.05	.60**	.51**																									
7. Relationships	5.21	1.23	.90	.04	.20**	.19**	.78**	.64**	.42**																								
8. Meaning	5.19	1.52	.92	.09	.16**	.26**	.79**	.77**	.47**	.58**																							
9. Accomplishment	5.56	0.95	.74	.09	.15**	.09	.77**	.63**	.45**	.57**	.57**																						
10. Health	5.17	1.26	.84	.17**	.15**	.03	.65**	.39**	.31**	.39**	.34**	.55**																					
11. ES	3.96	1.80	.86	.03	.40**	.24**	.63**	.41**	.23**	.39**	.34**	.38**	.43**																				
12. Environment	4.60	1.27	.59	.10*	.08	.03	.57**	.45**	.29**	.34**	.37**	.37**	.33**	.25**																			
13. Mindset	5.16	1.29	.82	.01	.21**	.17**	.86**	.79**	.43**	.67**	.71**	.65**	.48**	.47**	.41**																		
14. WB	3.88	1.04	.96	.11*	.12*	.07	.58**	.52**	.25**	.41**	.40**	.44**	.50**	.34**	.40**	.46**																	
15. PSS	15.17	3.70	.91	.01	.10*	.12*	.59**	.57**	.31**	.60**	.50**	.41**	.25**	.25**	.32**	.61**	.39**																
16. LS	22.33	7.52	.92	.02	.41**	.25**	.64**	.52**	.28**	.46**	.47**	.45**	.48**	.56**	.33**	.49**	.43**	.41**															
17. JS	21.05	5.81	.90	.11*	.24**	.21**	.84**	.93**	.48**	.64**	.78**	.62**	.38**	.43**	.42**	.80**	.52**	.60**	.55**														
T2																																	
18. PERMA+4	5.01	0.95	.94	.11*	.30**	.18**	.92**	.81**	.53**	.71**	.74**	.69**	.58**	.58**	.52**	.82**	.55**	.56**	.63**	.82**													
19. PE	4.67	1.59	.93	.06	.20**	.16**	.81**	.89**	.46**	.63**	.74**	.58**	.38**	.38**	.43**	.77**	.48**	.54**	.51**	.87**	.87**												
20. Engagement	5.22	1.13	.79	.17**	.18**	.01	.45**	.45**	.72**	.33**	.41**	.34**	.15**	.15**	.16**	.25**	.22**	.43**	.52**	.46**													
21. Relationships	5.30	1.21	.92	.04	.22**	.14**	.71**	.61**	.38**	.82**	.56**	.51**	.39**	.34**	.32**	.63**	.40**	.60**	.46**	.62**	.78**	.67**	.33**										
22. Meaning	5.24	1.49	.93	.10*	.16**	.23**	.73**	.71**	.44**	.53**	.89**	.54**	.32**	.31**	.38**	.68**	.39**	.46**	.44**	.74**	.79**	.76**	.41**	.59**									
23. Accomplishment	5.55	0.94	.72	.12*	.14**	.08	.70**	.60**	.44**	.50**	.56**	.77**	.49**	.30**	.35**	.63**	.41**	.38**	.44**	.60**	.78**	.65**	.43**	.56**	.63**								
24. Health	5.22	1.18	.83	.15**	.23**	.08	.60**	.39**	.29**	.38**	.31**	.50**	.79**	.45**	.35**	.45**	.47**	.23**	.46**	.40**	.64**	.41**	.19**	.40**	.34**	.52**							
25. ES	4.00	1.77	.85	.06	.42**	.23**	.59**	.40**	.20**	.36**	.31**	.37**	.40**	.91**	.23**	.46**	.32**	.24**	.55**	.42**	.61**	.41**	.17**	.35**	.31**	.35**	.44**						
26. Environment	4.61	1.29	.62	.09	.14**	.03	.55**	.46**	.25**	.35**	.38**	.34**	.34**	.28**	.78**	.45**	.41**	.36**	.47**	.63**	.50**	.17**	.42**	.44**	.39**	.41**	.29**						
27. Mindset	5.20	1.29	.83	.02	.21**	.16**	.80**	.77**	.43**	.62**	.67**	.62**	.42**	.43**	.41**	.86**	.47**	.56**	.54**	.79**	.87**	.81**	.43**	.64**	.46**	.45**	.50**						
28. WB	3.88	1.01	.97	.05	.13*	.05	.59**	.53**	.23**	.49**	.42**	.42**	.44**	.36**	.38**	.49**	.80**	.40**	.43**	.52**	.62**	.55**	.16**	.52**	.45**	.47**	.35**	.47**	.53**				
29. PSS	15.25	3.75	.92	.03	.14**	.15**	.58**	.54**	.32**	.58**	.49**	.43**	.25**	.26**	.32**	.60**	.35**	.85**	.39**	.57**	.62**	.59**	.28**	.67**	.51**	.46**	.26**	.28**	.38**	.61**	.41**		
30. LS	22.31	7.57	.93	.01	.42**	.22**	.61**	.50**	.27**	.46**	.44**	.45**	.46**	.53**	.29**	.47**	.40**	.92**	.53**	.65**	.54**	.24**	.50**	.45**	.47**	.55**	.37**	.54**	.44**	.39**			
31. JS	21.18	5.75	.90	.10*	.19**	.16**	.80**	.85**	.47**	.61**	.75**	.58**	.39**	.40**	.42**	.78**	.48**	.54**	.50**	.90**	.85**	.91**	.45**	.65**	.78**	.65**	.43**	.41**	.48**	.81**	.57**	.58**	.52**

Note. * $p < .05$ ** $p < .01$ *** $p < .001$. PE = Positive Emotions; ES = Economic Security; WB = Work-life Balance; PSS = Perceived Supervisor Support; LS = Life Satisfaction; JS = Job Satisfaction

Confirmatory Factor Analysis

I conducted a CFA using data from both time points to confirm the factor structure and establish discriminant validity of the study measures of PERMA+4, life satisfaction, job satisfaction, work-life balance, and perceived supervisor support. A robust maximum likelihood estimation was used and a Yuan-Bentler scaling correction factor was applied since the data was not multivariate normal (Jackson et al., 2009; Schmitt, 2011). For PERMA+4, I compared a one-factor model, a nine-factor model, and a one higher-order factor model along with one-factor models for life satisfaction, job satisfaction, work-life balance, and perceived supervisor support. I also tested a hypothesized bi-factor model for PERMA+4, but that model did not converge. The results of the CFA and model fit indices are presented in Table 12. Good model fit was determined by a combination of fit indices: a Chi-square goodness of fit test, a CFI value of $> .90$, an RMSEA value of $< .08$, an SRMR value of $< .08$, and a lower AIC value. The fit statistics and a model comparison indicated that a nine-factor model of PERMA+4 was significantly better than a higher-order factor model and a one-factor model of PERMA+4.

Table 12

CFA Model Fit Indices for Study 2 Variables

PERMA+4 Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	CFI	RMSEA	SRMR	AIC
Nine-factor	2983.81	1.09	1049		.94	.05	.06	96137.88
Higher-order Factor	3850.88	1.09	1108	829.82	.92	.06	.08	96978.17
One-factor	7569.50	1.10	1117	1917.41	.80	.09	.08	101090.45

Note. All chi-square values are significant at $p < .001$. All models included separate factor estimations for life satisfaction, job satisfaction, work-life balance, and perceived supervisor

support. Scaling Factor = Yuan-Bentler scaling correction factor; CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

Next, I tested for measurement invariance for PERMA+4, life satisfaction, job satisfaction, work-life balance, and perceived supervisor support to determine if there was measurement invariance across the two time points, gender (man or woman), or race (White or BIPOC). I tested for four types of increasingly strict measurement invariance: configural (factor structure), metric (item factor loadings), scalar (item intercepts), and strict (item residual variances), and conducted model comparisons using likelihood ratio testing (Berrington et al., 2006; Putnick & Bornstein, 2016). Results are displayed in Table 13. Adequate fit statistics for the configural invariance models and model comparisons demonstrated that the nine-factor structure of PERMA+4 and one-factor structures of life satisfaction, job satisfaction, and work-life balance were stable across time, gender, and race. In addition, model comparisons for the metric, scalar, and strict models indicate that item factor loadings, intercepts, and residual correlations for all items were stable over time but not across gender. Item factor loadings for individual items were also stable across race, but not intercepts and residual correlations.

Table 13

Model Fit Indices for Measurement Invariance Testing

Invariance Types	Scaled χ^2	Scaling Factor	df	CFI	RMSEA	SRMR	$\Delta\chi^2$	Δdf
Time								
Configural	4074.12	1.07	2098	.94	.05	.06		
Metric	4103.16	1.08	2134	.94	.05	.06	30.88	36
Scalar	4126.66	1.07	2170	.94	.05	.06	20.06	36

Strict	4151.82	1.09	2219	.94	.05	.06	48.38	49
Gender								
Configural	4469.13	1.07	2098	.93	.06	.06		
Metric	4521.17	1.07	2134	.93	.05	.07	53.11*	36
Scalar	4639.28	1.07	2170	.93	.06	.07	121.42*	36
							**	
Strict	4697.67	1.08	2219	.92	.06	.07	73.81*	49
Race								
Configural	4384.21	1.06	2098	.93	.05	.06		
Metric	4422.44	1.06	2134	.93	.05	.06	38.67	36
Scalar	4524.78	1.06	2170	.93	.05	.06	103.72*	36
							**	
Strict	4650.83	1.08	2219	.93	.05	.06	118.45*	49
							**	

Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Scaling Factor = Yuan-Bentler scaling correction factor; CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual.

Hypotheses Testing for Research Question 1: Which PERMA+4 building blocks or combinations of building blocks contribute most to improving well-being among workers?

To test hypotheses 1 and 2, I conducted cross-lagged panel modeling using path analysis. Due to the violations of the assumptions of homoscedasticity and multivariate normality in the data for linear regression, all path models were fit using robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic (Tomarken & Waller, 2005). Model comparisons were conducted using likelihood ratio testing.

All models controlled for age, income, and education (T1) when estimating paths from predictor variables to outcomes. Model 1 estimated autoregressive paths for all variables and cross-lagged paths from the PERMA+4 building blocks at T1 to life satisfaction and job satisfaction at T2, but not vice versa. Model 2 further specified cross-lagged paths from life satisfaction and job satisfaction at T1 to the PERMA+4 building blocks at T2 to estimate a saturated cross-lagged panel model. Model 3 further specified exogenous covariances between life satisfaction and job satisfaction at T1 and all PERMA+4 building blocks at T1. Model comparisons via likelihood ratio testing indicated that Model 2 demonstrated a significantly better fit to the data than either Model 1 or Model 3. Table 14 provides a summary of the model comparisons.

Table 14

H1 and H2 Cross-lagged Panel Model Comparison

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Model 2	181.52	1.00	101			.99	.04	.03	10569.20
Model 1	286.31	1.01	119	99.13	18	.97	.06	.09	10642.11
Model 3	2206.12	1.04	171	1830.13	52	.78	.17	.35	24847.33

Note. All chi-square values and $\Delta\chi^2$ are significant at $p < .001$. Scaling Factor = Yuan-Bentler scaling correction factor; CFI = robust comparative fit index; RMSEA = robust root-mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

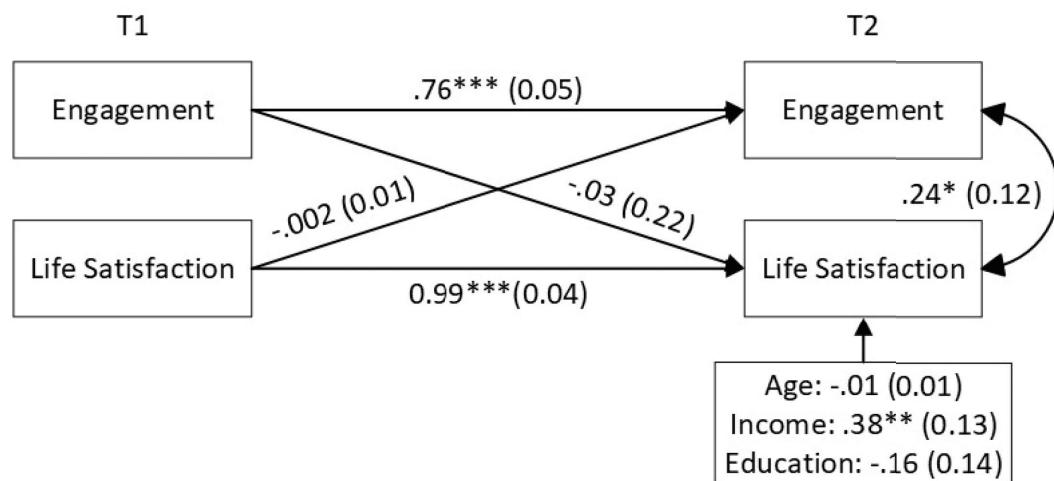
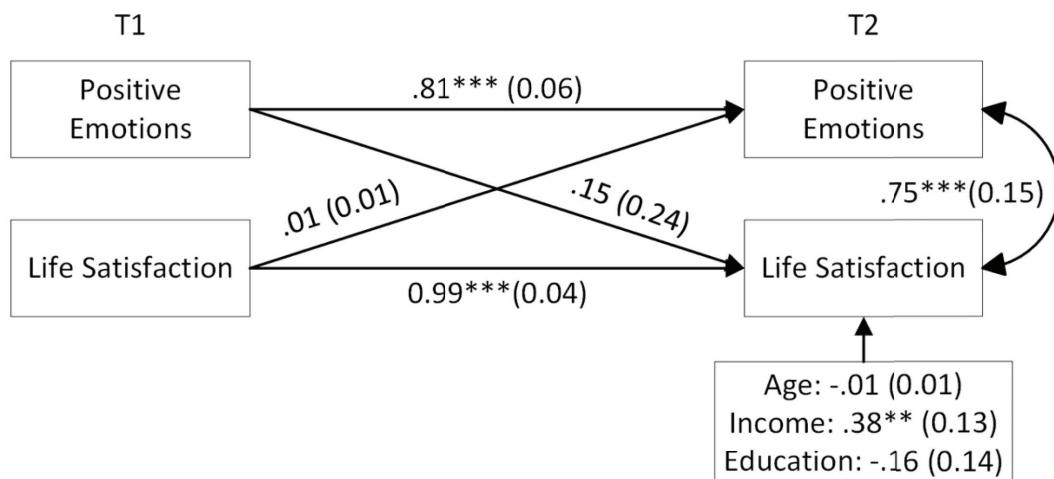
H1: The Strongest PERMA+4 Predictors of Life Satisfaction

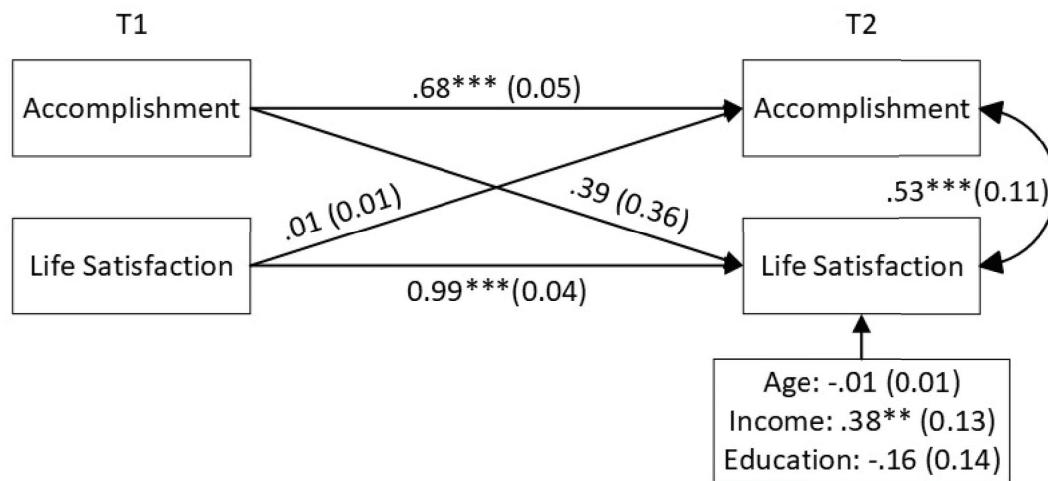
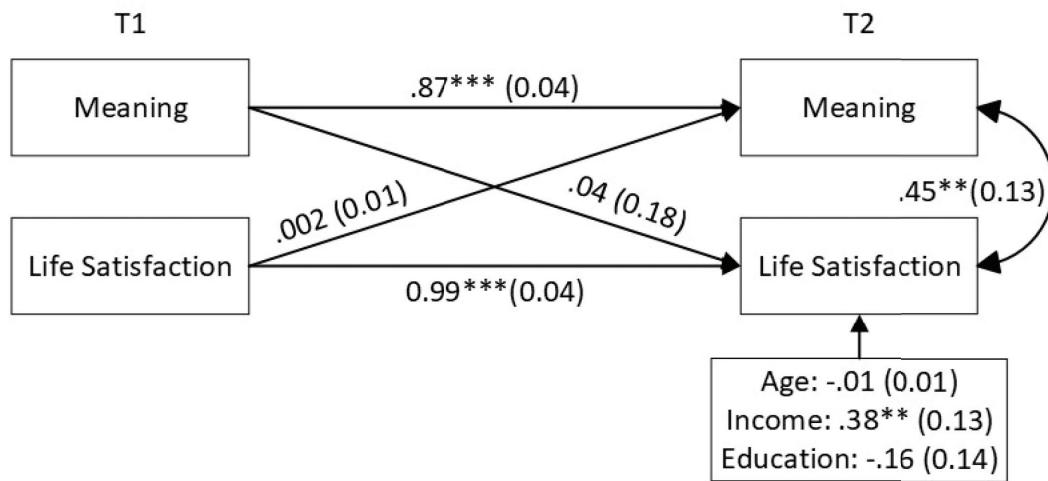
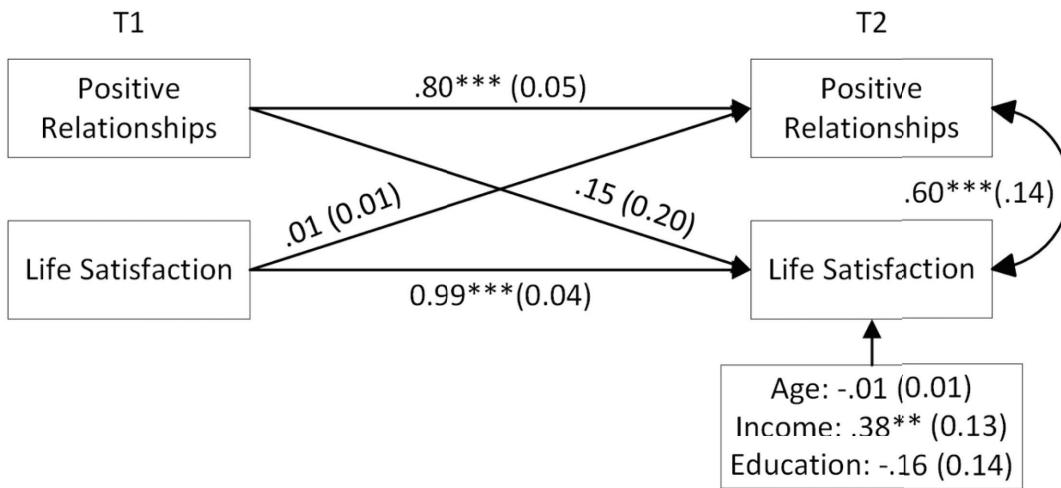
Due to the complexity of Model 2, the results of testing H1 are depicted as separate cross-lagged panel models for each PERMA+4 building block and life satisfaction (see Figure 2 for results). Autoregressive effects were significant, indicating stability in all PERMA+4

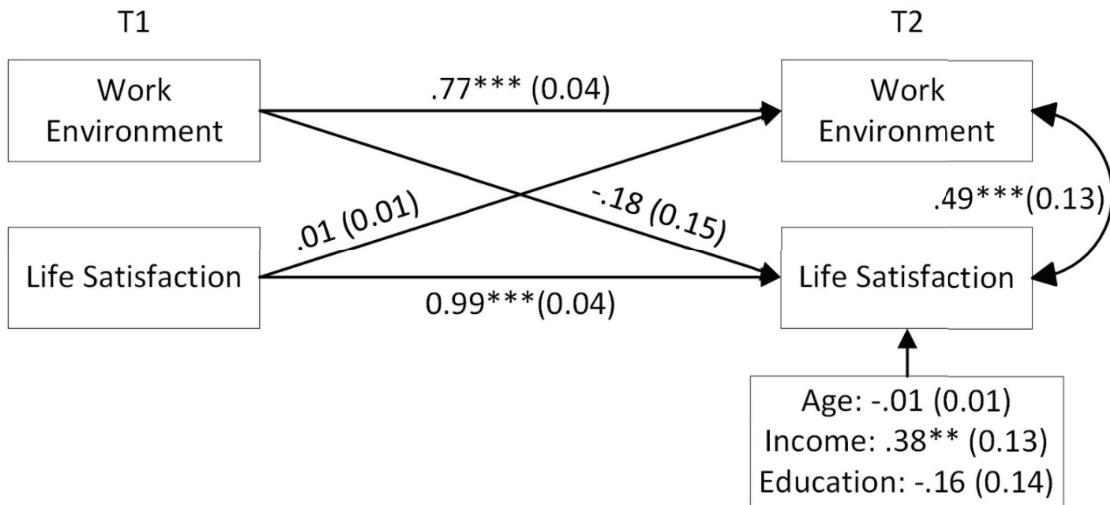
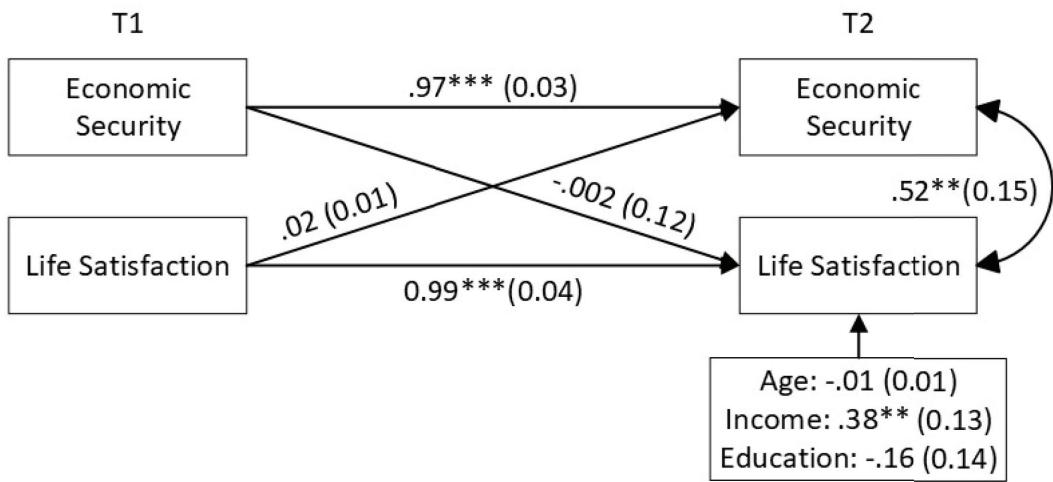
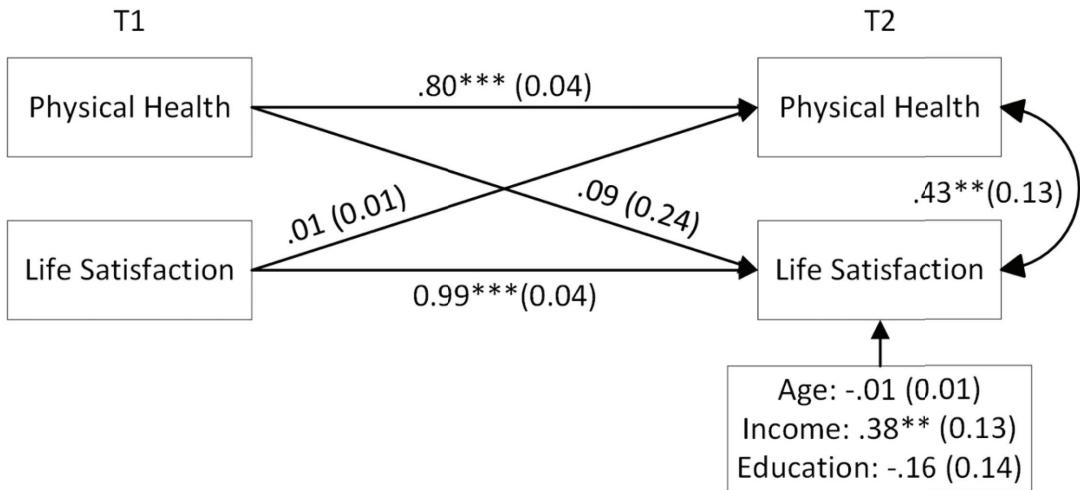
building blocks and life satisfaction between time points. There were no significant cross-lagged effects from any PERMA+4 building block at T1 to life satisfaction at T2, although the cross-lagged effect of income (T1) on life satisfaction (T2) was significant ($\beta = .83, p < .001$). Therefore, Hypothesis 1 was not supported. However, there was a significant cross-lagged effect of life satisfaction at T1 on mindset at T2 ($\beta = .02, p < .001$).

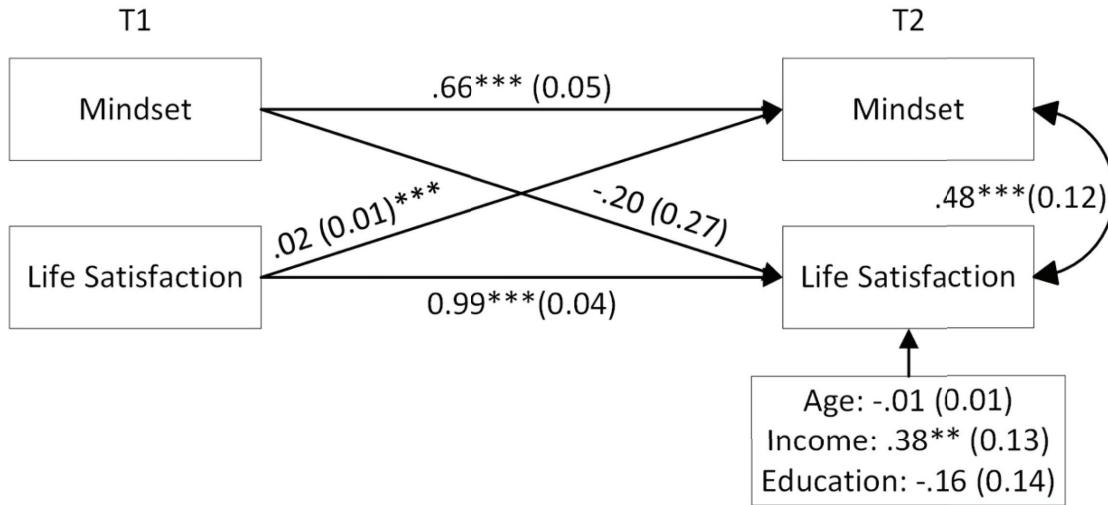
Figure 2

Cross-lagged Panel Model (Path Analysis) Results for H1









Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Model 2 is depicted as separate models and displays standardized β coefficients (and standard errors) by path. Covariances between all T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

H2: The Strongest PERMA+4 Predictors of Job Satisfaction

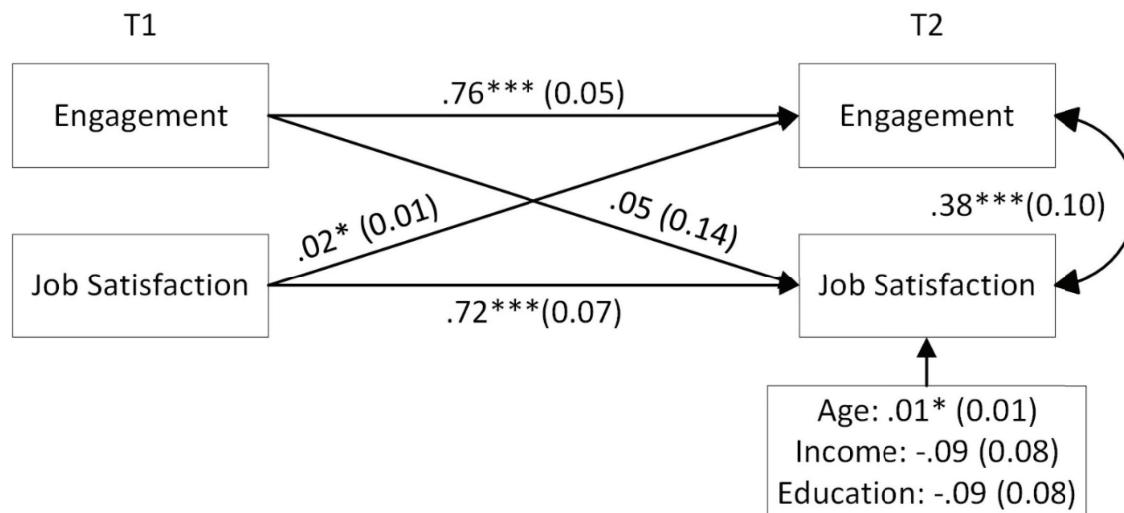
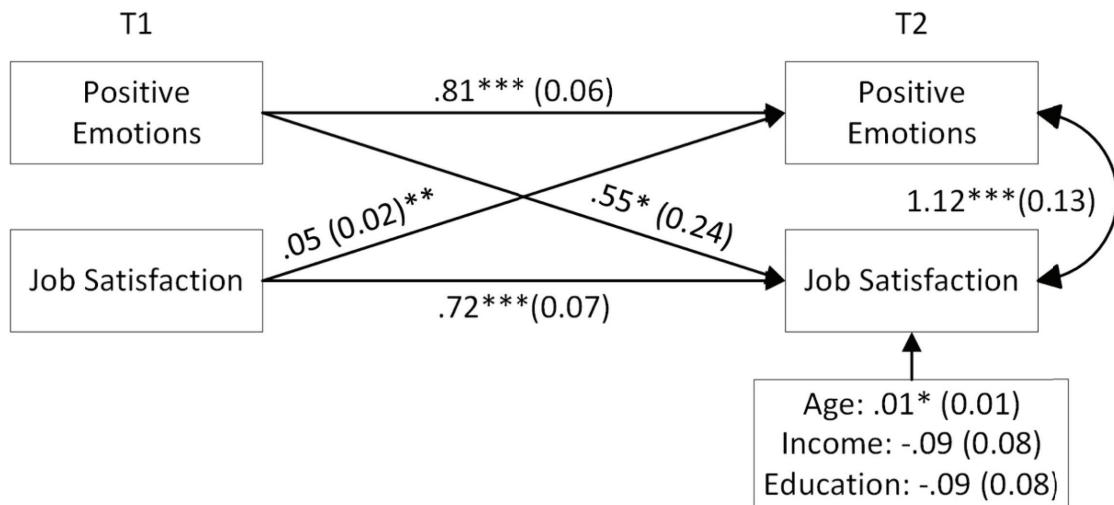
Due to the complexity of Model 2, the results of testing H2 are also depicted as separate cross-lagged panel models for each PERMA+4 building block and life satisfaction (see Figure 3 for results). Autoregressive effects were significant, indicating stability in all PERMA+4 building blocks and job satisfaction between time points. Although the cross-lagged effects of engagement (T1) and accomplishment (T1) on job satisfaction (T2) were not significant, the cross-lagged effect of meaning (T1) on job satisfaction (T2) was significant ($\beta = .30, p < .05$), providing partial support for Hypothesis 2. The cross-lagged effect of positive emotions (T1) on job satisfaction (T2) was also significant ($\beta = .55, p < .05$).

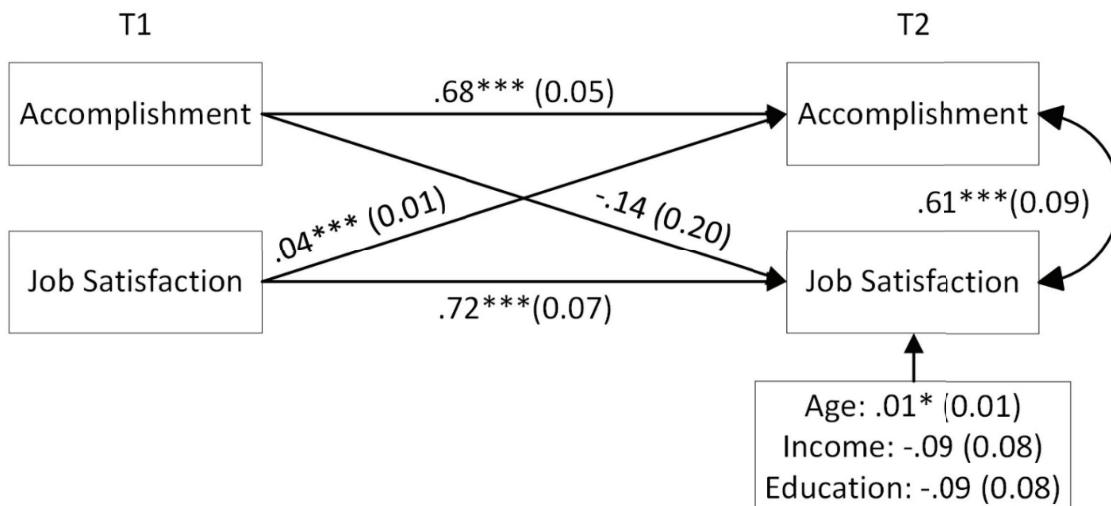
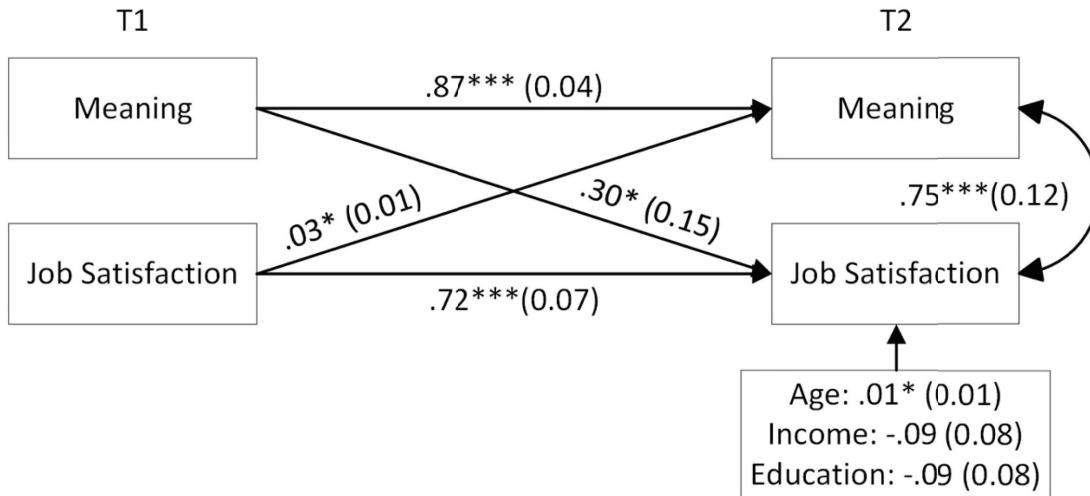
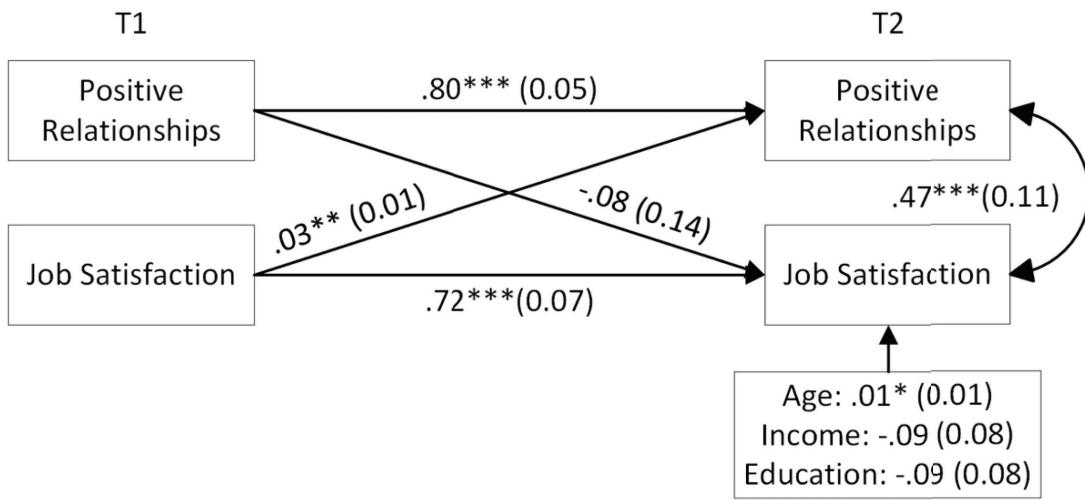
There were also unexpected significant cross-lagged effects of job satisfaction at T1 on all the PERMA+4 building blocks except for economic security at T2. Job satisfaction at T1 was

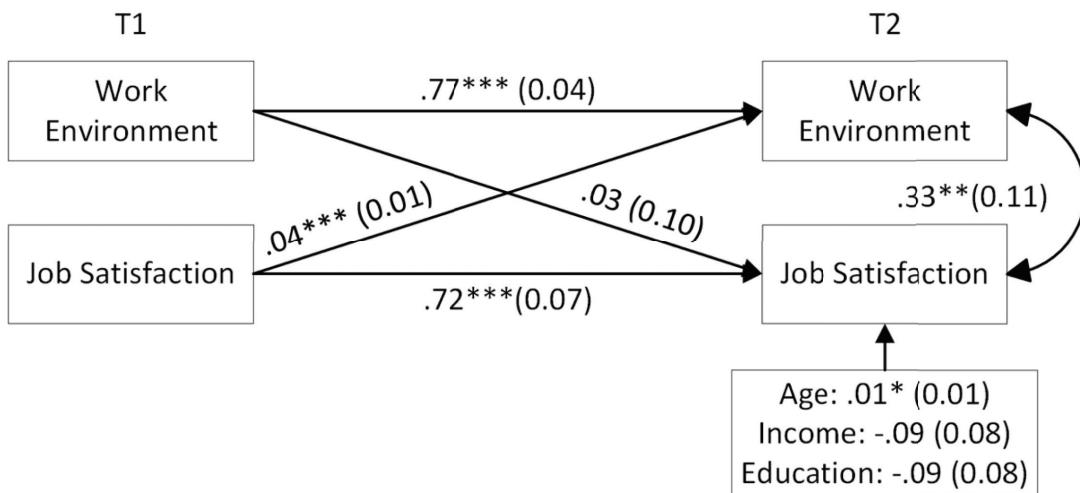
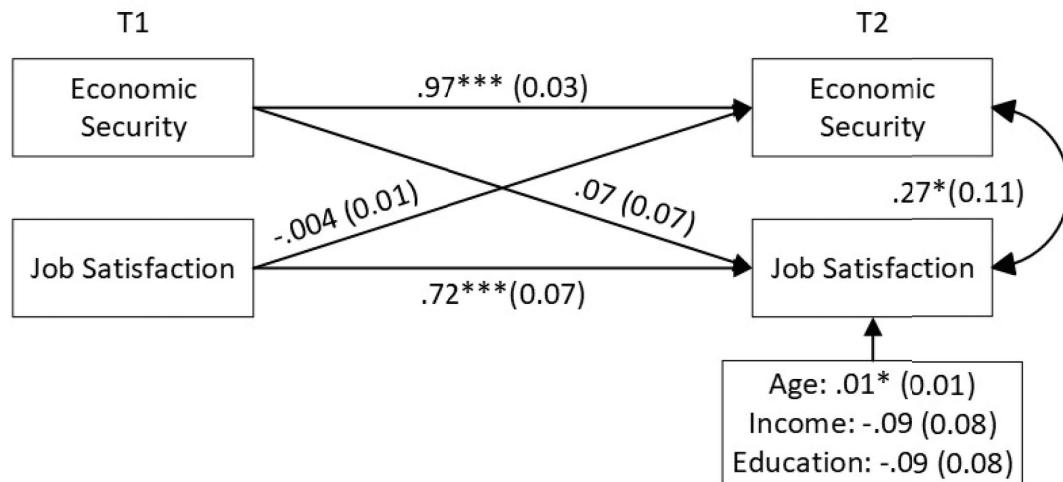
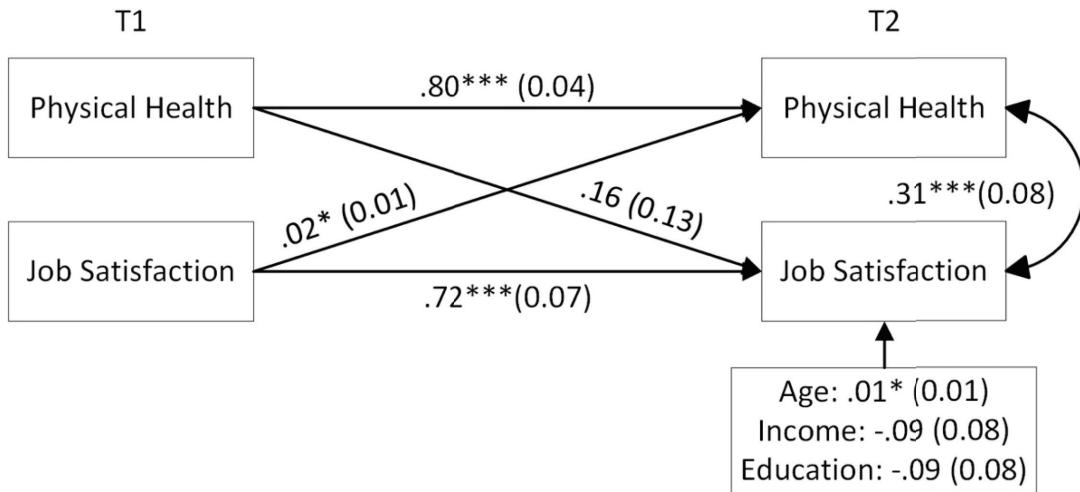
a significant predictor of positive emotions ($\beta = .05, p < .01$), engagement ($\beta = .03, p < .05$), positive relationships ($\beta = .02, p < .001$), meaning ($\beta = .03, p < .05$), accomplishment ($\beta = .04, p < .001$), physical health ($\beta = .02, p < .05$), work environment ($\beta = .04, p < .001$), and mindset ($\beta = .07, p < .001$) at T2.

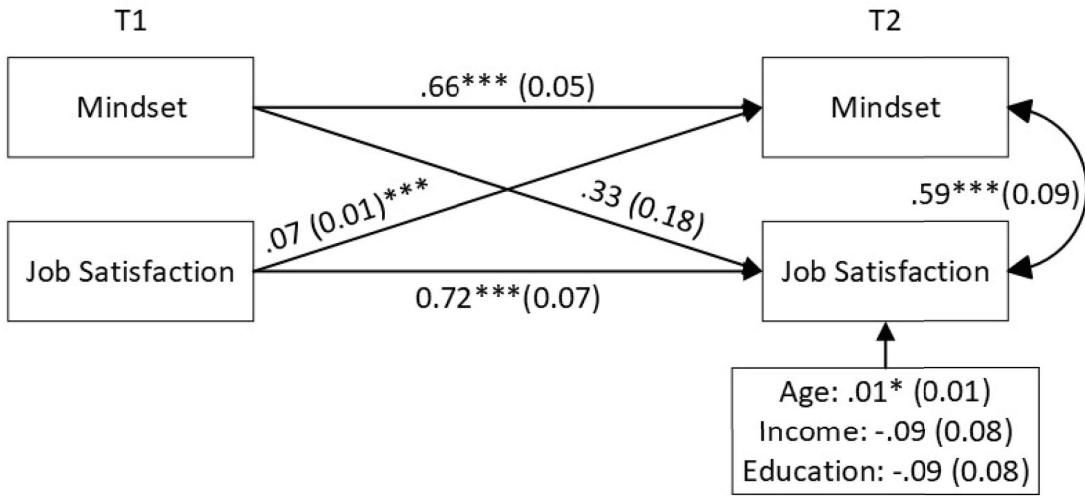
Figure 3

Cross-lagged Panel Model (Path Analysis) Results for H2









Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Model 2 is depicted as separate models and displays standardized β coefficients (and standard errors) by path. Covariances between all T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

H1 and H2 Structural Invariance Testing Across Gender and Race

I tested Model 2 for structural invariance across gender and race to determine if the model structure and paths were the same across groups for each variable. For each variable, I used likelihood ratio testing to compare Model 2 as an unconstrained model (allowed all coefficients to be freely estimated across groups) to a constrained model (fixed all coefficients to be equal across groups). There was no significant difference between the two models for race. However, the constrained model for gender was a significantly worse fit than the unconstrained model, demonstrating structural invariance across race but not gender, indicating the presence of differences in the model coefficients between women and men. The results of the model comparison are summarized in Table 15.

Table 15

H1& H2 Structural Invariance Testing Results for Gender and Race

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Gender									
Unconstrained	345.09	.99	202			.98	.06	.03	10654.50
Constrained	405.26	.99	238	60.20**	36	.97	.06	.04	10643.41
Race									
Unconstrained	279.34	.99	202			.99	.04	.03	10654.00
Constrained	315.17**	.99	238	36.02	36	.99	.04	.03	10618.24

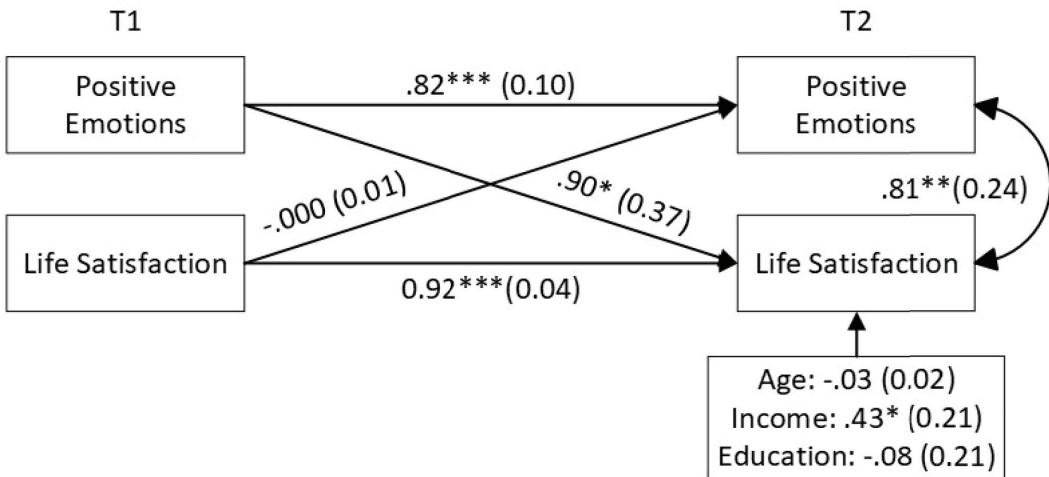
Note. All chi-square values and $\Delta\chi^2$ are significant at $p < .001$. CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

H1 Testing Gender Differences. I then examined the unconstrained Model 2 for each gender group and found differences from the main findings for H1. Although the cross-lagged effect of positive emotions (T1) on life satisfaction (T2) was not significant for the sample as a whole or for men, it was significant for women ($\beta = .90, p < .05$).

In addition, the cross-lagged effect of life satisfaction (T1) on mindset (T2) was significant for men ($\beta = .03, p < .001$) as it was for the whole sample, but not for women. See Figures 4 and 5 for the significant cross-lagged panel model path analysis results for women and men.

Figure 4

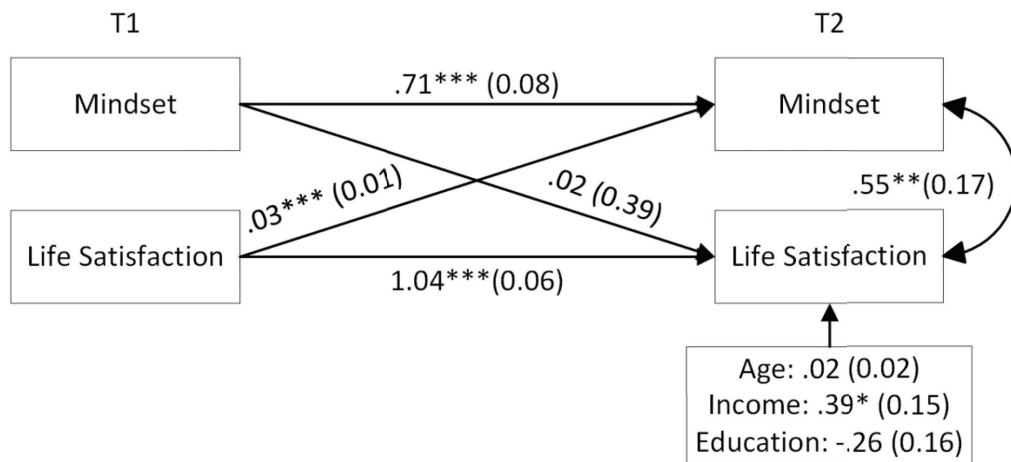
Cross-lagged Panel Model (Path Analysis) Significant H1 Testing Results for Women (n = 197)



Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Unconstrained Model 2 is depicted as a separate model for positive emotions and displays standardized β coefficients (and standard errors) by path. Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

Figure 5

Cross-lagged Panel Model (Path Analysis) Significant H1 Testing Results for Men (n = 209)



Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Unconstrained Model 2 is depicted as a separate model for each building block and displays standardized β coefficients (and standard errors) by path.

Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

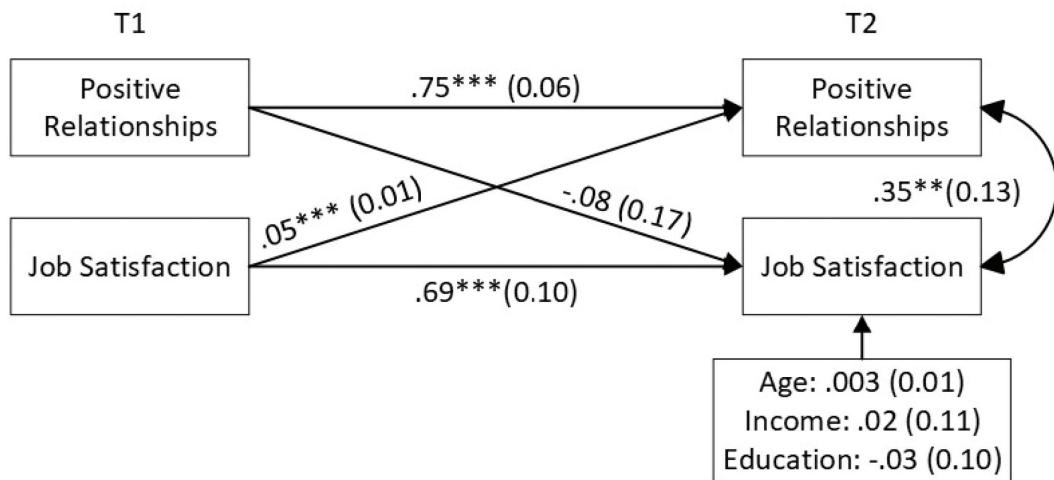
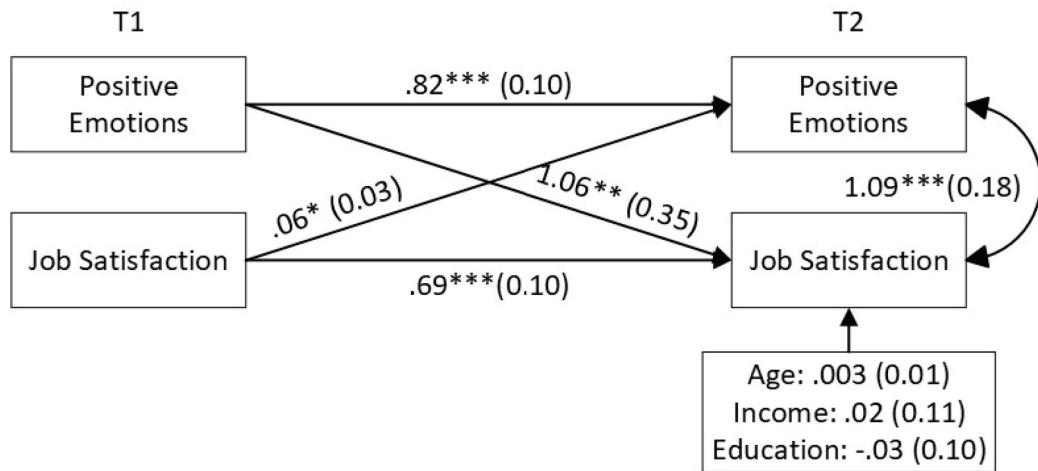
H2 Testing Gender Differences. I also examined the unconstrained Model 2 for each gender group and found differences from the main findings for H1. Some findings were consistent with the whole sample. The cross-lagged effect of job satisfaction (T1) on accomplishment (T2) was significant for women ($\beta = .04, p < .001$) and for men ($\beta = .03, p < .01$). There were also findings that indicate gender was a moderator of the relationship between predictor and outcome for H1. Consistent with the whole sample, the cross-lagged effect of positive emotions (T1) on job satisfaction (T2) was significant for women ($\beta = 1.06, p < .01$) and men ($\beta = .05, p < .05$) and job satisfaction (T1) on positive emotions (T2) was only significant for women ($\beta = .06, p < .05$).

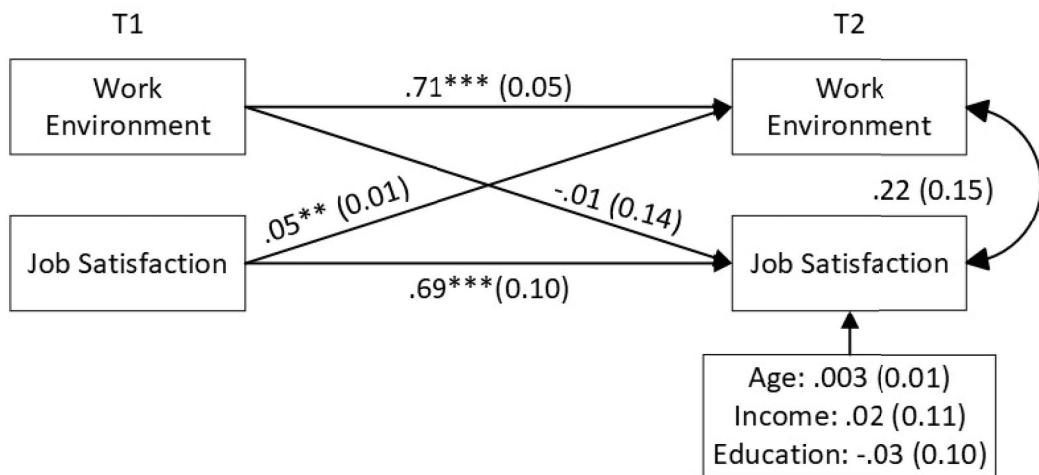
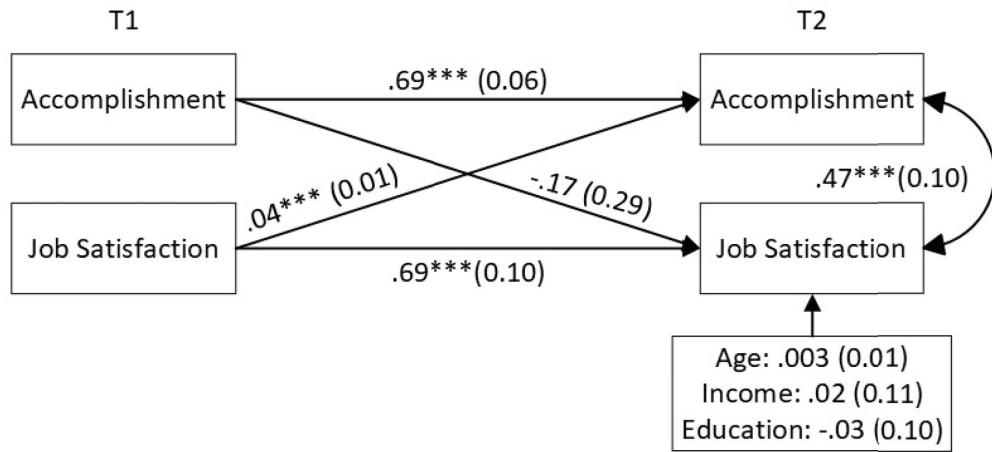
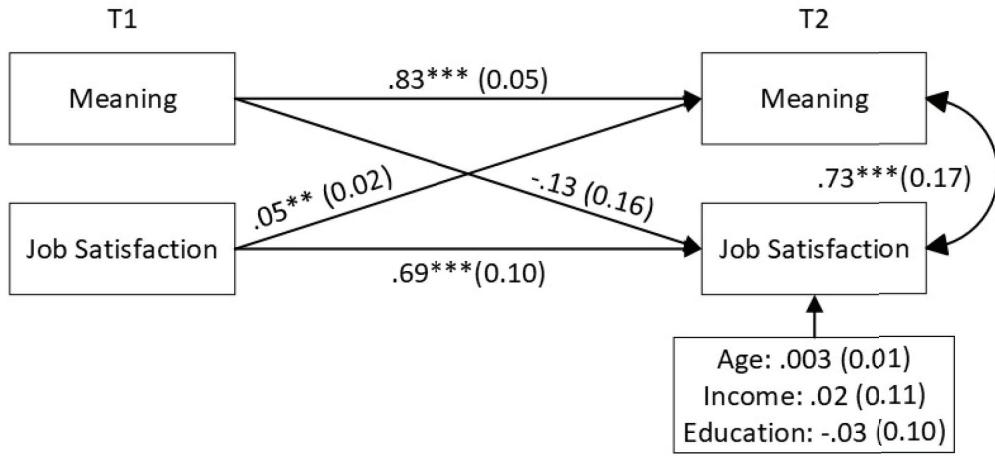
In addition, there were findings that resulted from H2 testing that were not hypothesized and indicated gender differences. Job satisfaction (T1) on positive emotions (T2) was only significant for men ($\beta = .05, p < .05$). Job satisfaction (T1) on positive relationships (T2) was only significant for women ($\beta = .05, p < .001$). For the whole sample, the cross-lagged effect of job satisfaction (T1) on meaning (T2) and meaning (T1) on job satisfaction (T2) was significant, but when broken down by gender only job satisfaction (T1) on meaning (T2) was significant for women ($\beta = .05, p < .01$) and only meaning (T1) on job satisfaction (T2) was significant for men ($\beta = .75, p < .01$). The cross-lagged effect of job satisfaction (T1) on physical health (T2) was also significant for the whole sample but only for men ($\beta = .04, p < .001$) and not women. The cross-lagged effect of job satisfaction (T1) on environment (T2) was significant for the whole sample, but only for women ($\beta = .05, p < .01$) when broken down by gender. Similarly, the cross-lagged effect of job satisfaction (T1) on mindset (T2) was significant for the whole sample

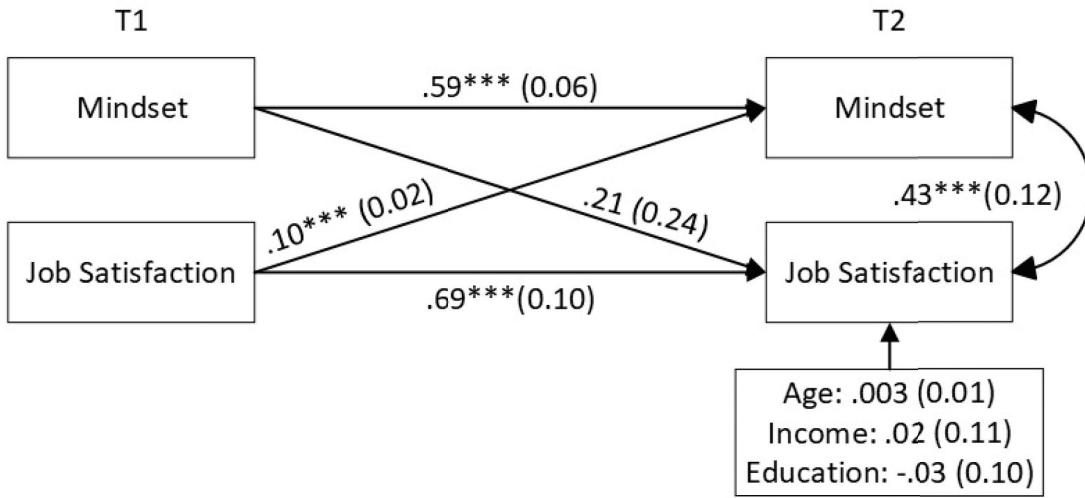
but only for women ($\beta = .10, p < .001$) and not men. Finally, although the cross-lagged effect of job satisfaction (T1) on engagement was significant for the sample, it was found not to be significant for men or women. See Figures 6 and 7 for the significant cross-lagged panel model path analysis results for women and men.

Figure 6

Cross-lagged Panel Model (Path Analysis) Significant H2 Testing Results for Women (n = 197)



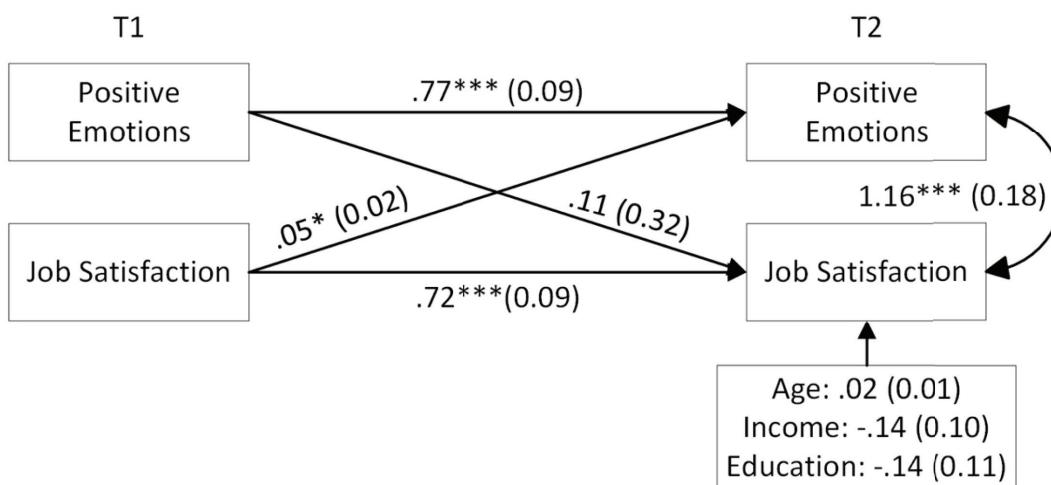


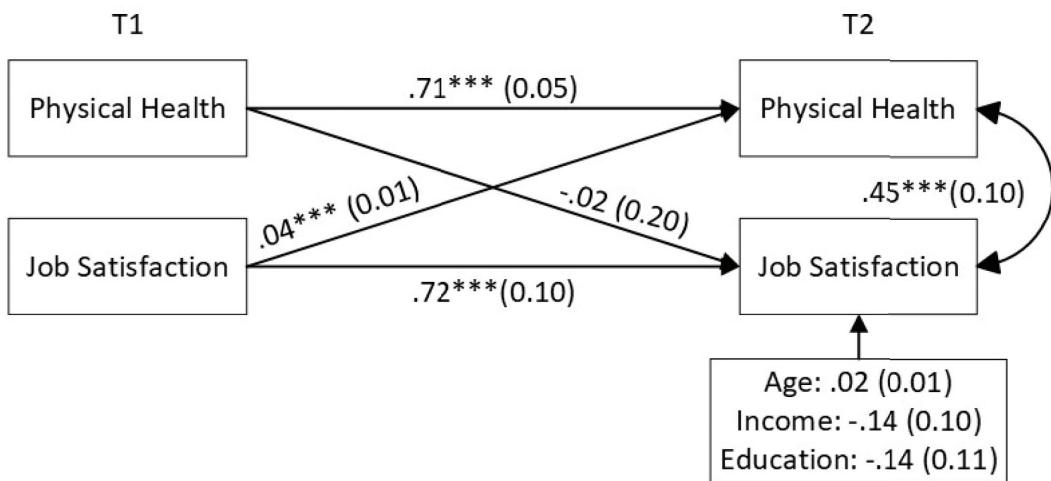
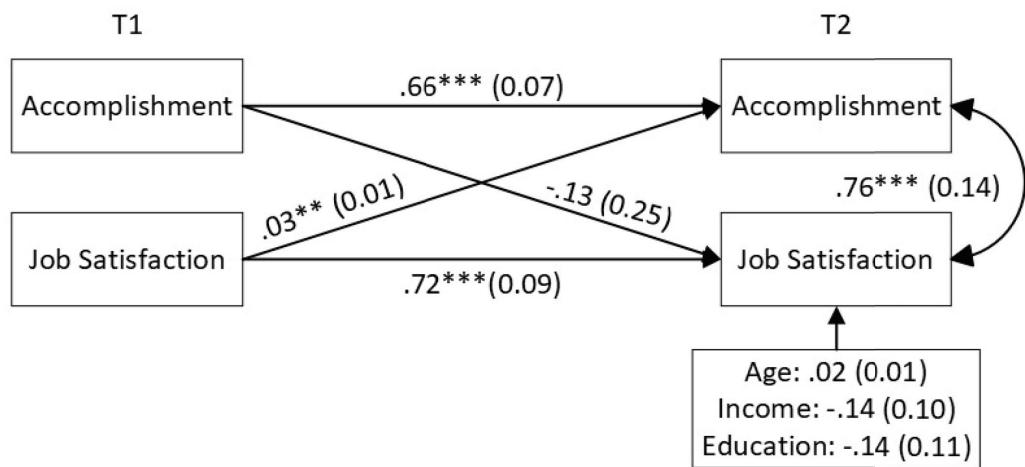
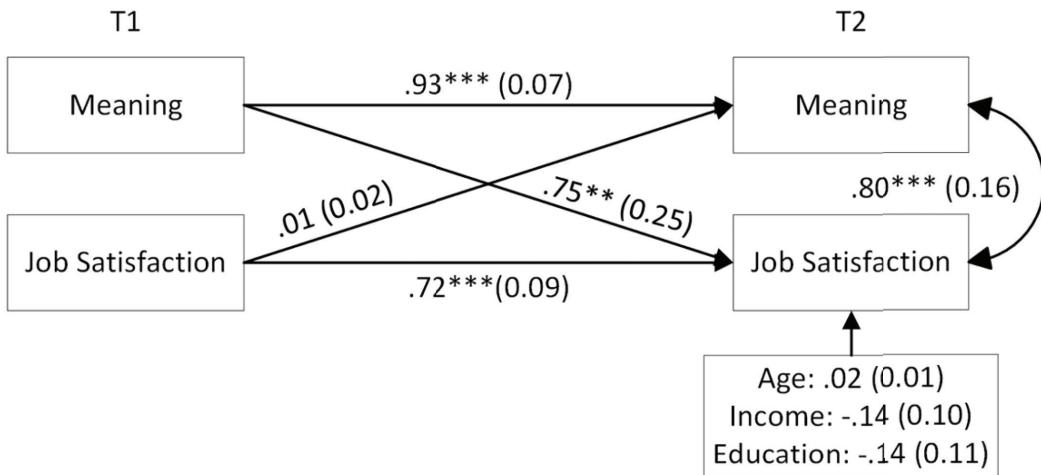


Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Unconstrained Model 2 is depicted as a separate model for each building block and displays standardized β coefficients (and standard errors) by path. Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

Figure 7

Cross-lagged Panel Model (Path Analysis) Significant H2 Testing Results for Men (n = 209)





Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Unconstrained Model 2 is depicted as a separate model for each building block and displays standardized β coefficients (and standard errors) by path. Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

H1 and H2 Exploratory Analyses

Exploratory multiple regression analyses were also conducted to determine the amount of variance the PERMA+4 building blocks contributed to the outcomes of life satisfaction and job satisfaction. A model with each of the PERMA+4 building blocks at T1 as predictor variables significantly predicted life satisfaction showing that PERMA+4 explained 46% of the variance in life satisfaction at T1, $F(9,396) = 38.08, p < .001, R^2 = .46$, and explained 40% of the variance in life satisfaction at T2, $F(9,396) = 29.53, p < .001, R^2 = .40$. A model with each of the PERMA+4 building blocks at T1 as predictor variables also significantly predicted job satisfaction where PERMA+4 explained 88% of the variance in job satisfaction at T1, $F(9, 396) = 312.43, p < .001, R^2 = .88$, and explained 74% of the variance in job satisfaction at T2, $F(9, 396) = 122.57, p < .001, R^2 = .74$. In case this large amount of variance in job satisfaction was due to the predictor variable of positive emotions overlapping with job satisfaction, I also conducted the same multiple regression analyses without positive emotions as a predictor in the model at T1. This model at T1 also significantly predicted job satisfaction and explained 76% of the variance in job satisfaction at T1, $F(8, 397) = 157.86, p < .001, R^2 = .76$, and 68% of the variance in job satisfaction at T2, $F(8, 397) = 105.51, p < .001, R^2 = .68$, indicating that even without positive emotions, a model with only the other eight building blocks accounted for a large amount of variance in job satisfaction.

Hypotheses Testing for Research Question 2: What are the relationships among the PERMA+4 building blocks and how do they interact to improve well-being for workers?

To test Hypotheses 3 through 10, I conducted cross-lagged panel modeling using path analysis. All path models were fit using robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic (Tomarken & Waller, 2005). Model comparisons were conducted using likelihood ratio testing. All models estimated autoregressive paths for all variables and controlled for age, income, and education (T1) when estimating paths from predictor variables to outcomes. Model 4 included cross-lagged paths from predictor variables at T1 to outcome variables of positive emotions and accomplishment at T2, but not vice versa. Model 5 further specified cross-lagged paths from outcome variables at T1 to predictor variables at T2 to estimate a saturated cross-lagged panel model. Model 6 further specified exogenous covariances between all variables at T1. Model comparisons via likelihood ratio testing indicated that Model 5 demonstrated a significantly better fit to the data than either Model 4 or Model 6. Table 16 provides a summary of the model comparisons.

Table 16

H3 to H10 Cross-lagged Panel Model Comparison

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Model 5	124.92	0.96	58			.98	.05	.03	6288.41
Model 4	163.46	0.98	66	36.17	8	.98	.06	.06	6312.30
Model 6	848.87	1.02	102	648.31	36	.86	.14	.26	14784.31

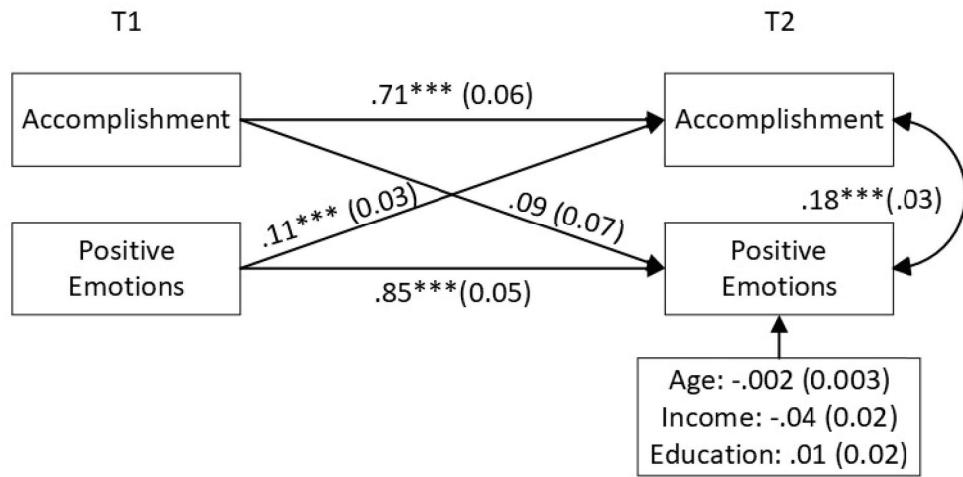
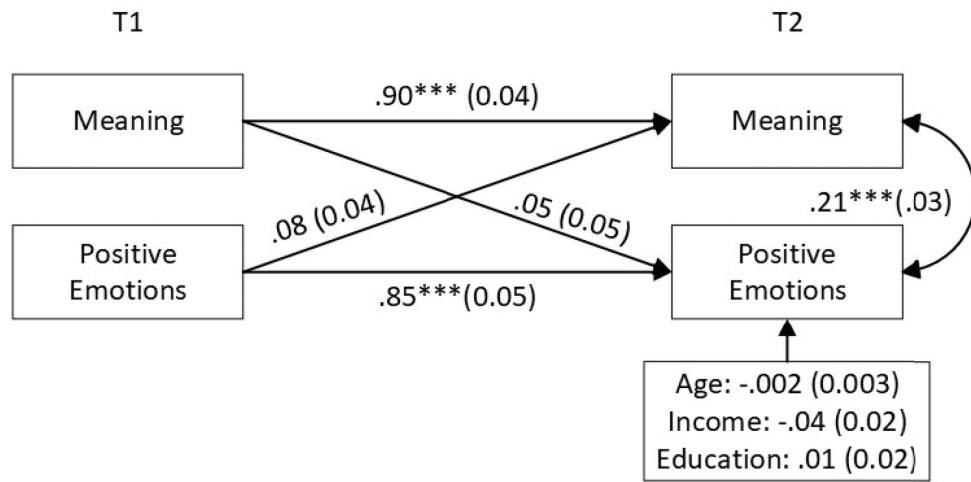
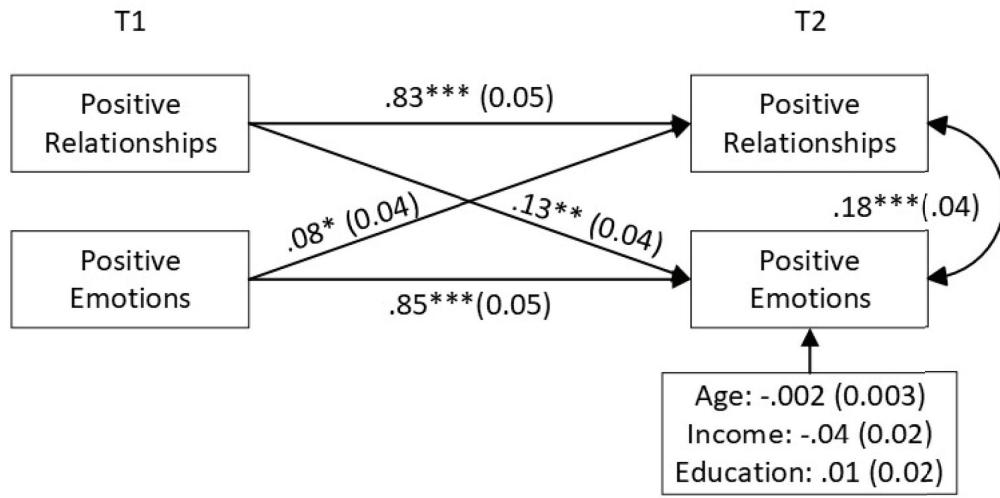
Note. All chi-square values and $\Delta\chi^2$ are significant at $p < .001$. CFI = robust comparative fit index; RMSEA = robust root-mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

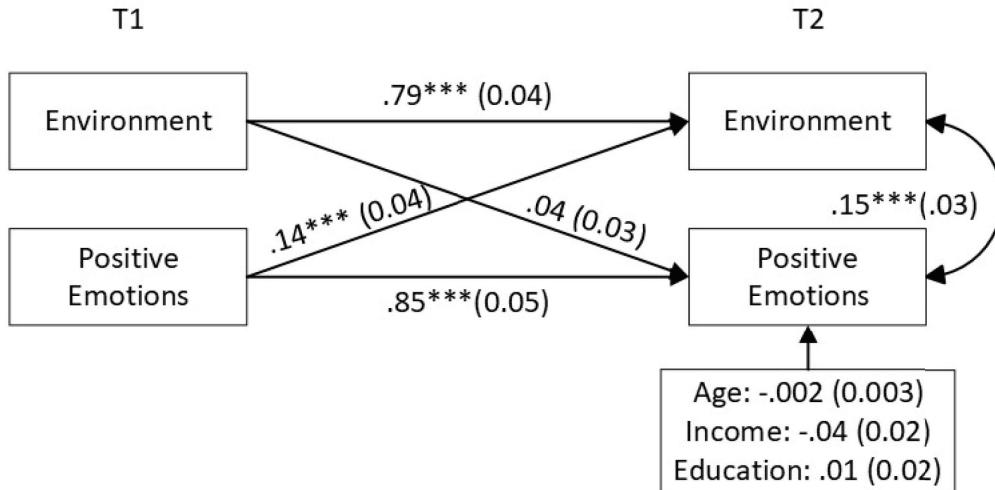
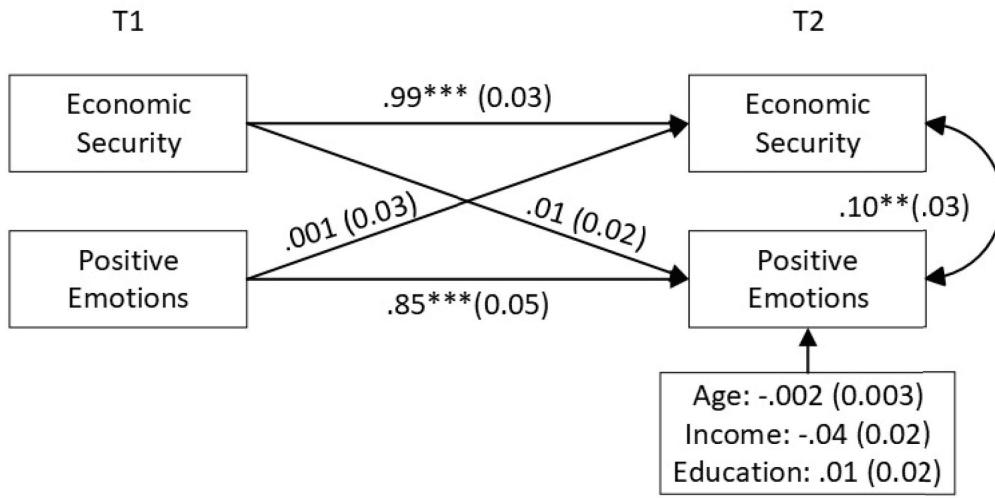
H3 to H7: PERMA+4 Predictors of Positive Emotions

Due to the complexity of Model 5, the results for H3 to H7 are depicted in separate cross-lagged panel models for each hypothesis (see Figure 8). Autoregressive effects were significant, indicating stability in all variables between time points. The cross-lagged effect of positive relationships (T1) on positive emotions (T2) was significant ($\beta = .13, p < .01$), providing support for Hypothesis 3. In addition, the cross-lagged effect of positive emotions (T1) on positive relationships (T2) was also significant ($\beta = .08, p < .05$). The cross-lagged effect of meaning (T1) on positive emotions (T2) was not significant. Therefore, Hypothesis 4 was not supported. The cross-lagged effect of accomplishment (T1) on positive emotions (T2) was also not significant; therefore, Hypothesis 5 was not supported. However, the cross-lagged effect of positive emotions (T1) on accomplishment (T2) was significant ($\beta = .11, p < .001$). The cross-lagged effect of economic security (T1) on positive emotions (T2) was also not significant. Therefore, Hypothesis 6 was not supported. Finally, the cross-lagged effect of environment (T1) on positive emotions (T2) was also not significant. Therefore, Hypothesis 7 was not supported, although the cross-lagged effect of positive emotions (T1) on environment (T2) was significant ($\beta = .14, p < .001$).

Figure 8

Cross-lagged Panel Model (Path Analysis) Results for H3 to H7





Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Model 5 is depicted as separate models and displays standardized β coefficients (and standard errors) by path. Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

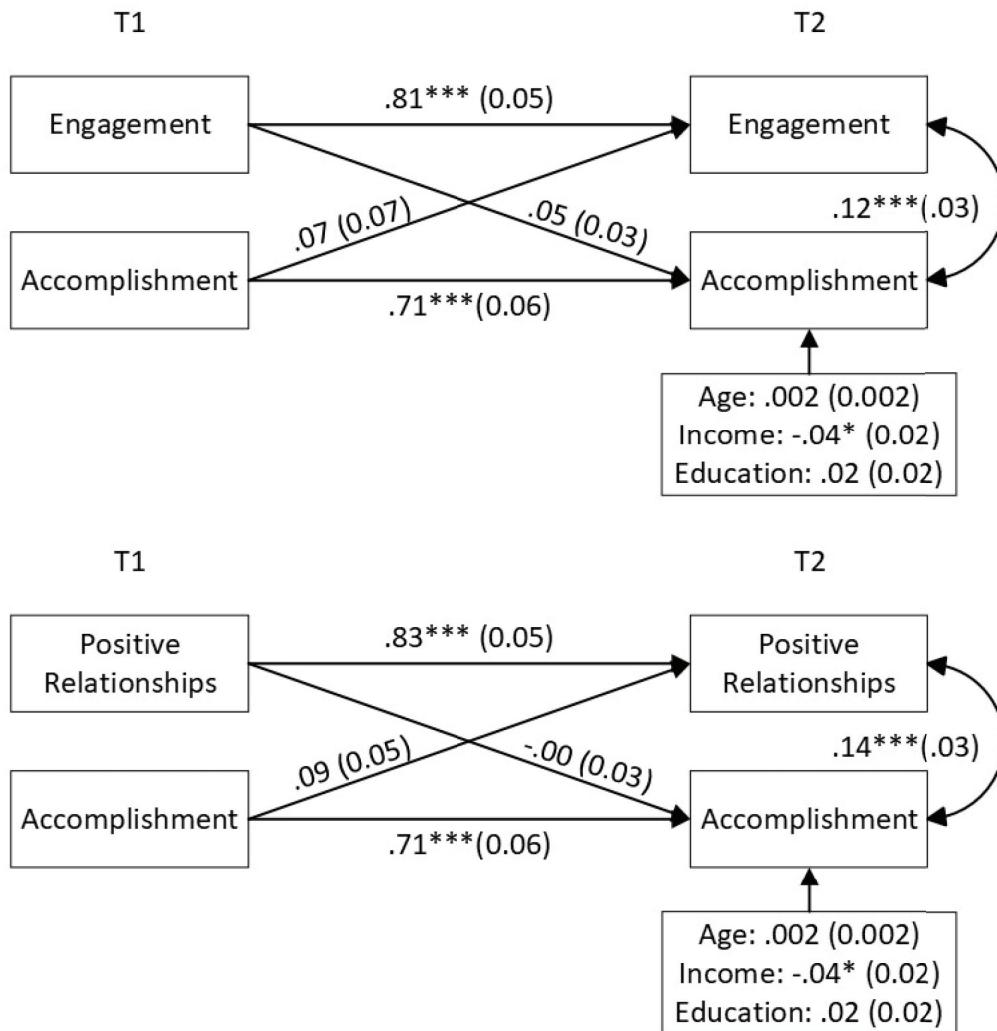
H8 to H10: PERMA+4 Predictors of Accomplishment

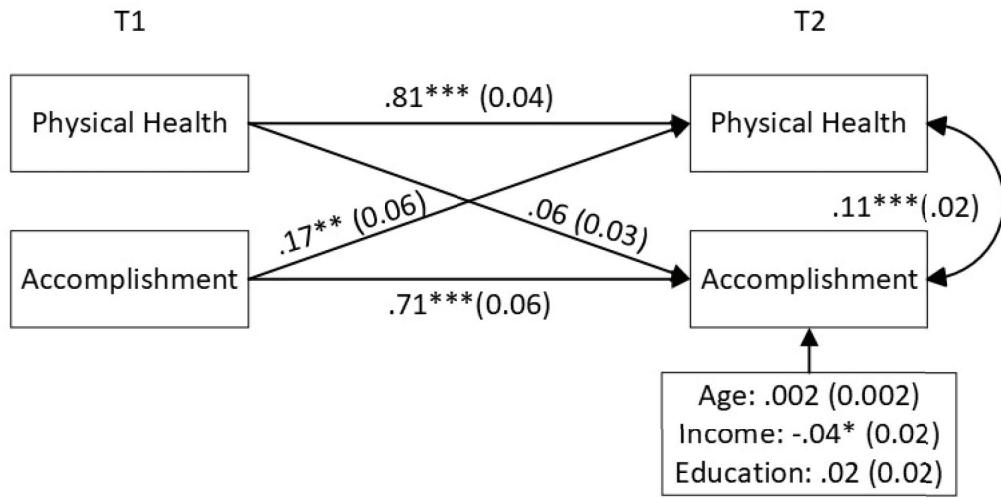
Due to the complexity of Model 5, the results for H8 to H10 are depicted in separate cross-lagged panel models for each hypothesis (see Figure 9). Autoregressive effects were significant, indicating stability in all variables between time points. The cross-lagged effect of

engagement (T1), positive relationships (T1), and physical health (T1) on accomplishment were not significant, although the cross-lagged effect of accomplishment (T1) on physical health (T2) was significant ($\beta = .17, p < .01$). Therefore, Hypotheses 8, 9, and 10 were not supported.

Figure 9

Cross-lagged Panel Model (Path Analysis) Results for H8 to H10





Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Model 5 is depicted as separate models and displays standardized β coefficients (and standard errors) by path. Covariances between T2 variables were estimated simultaneously, so the correlations depicted in the models are controlling for the covariances not depicted.

Structural Invariance Testing Across Gender and Race

I tested Model 5 for structural invariance across gender and race to determine if the model structure and paths were the same across groups for each variable. For each variable, I used likelihood ratio testing to compare Model 5 as an unconstrained model that allowed all coefficients to be freely estimated across groups) to a constrained model that fixed all coefficients to be equal across groups. The constrained models did not demonstrate a significantly worse fit to the data, indicating the presence of structural invariance across both gender and race for Model 5, confirming no significant differences in H3 to H10 results across gender or race. The results of the model comparison are summarized in Table 17.

Table 17

Model 5 Structural Invariance Testing Results for Gender and Race

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Gender									
Unconstrained	237.51***	.96	116			.97	.07	.04	6362.62
Constrained	264.49***	.97	146	28.60	30	.97	.06	.04	6331.77
Race									
Unconstrained	179.70***	.97	116			.99	.05	.04	6348.48
Constrained	203.47**	.98	146	24.90	30	.99	.04	.04	6314.10

Note. ** $p < .01$ *** $p < .001$. CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

Hypotheses Testing for Research Questions 3 & 4: Are there moderators or enablers that help the PERMA+4 building blocks improve well-being for workers and does PERMA+4 predict improved well-being for workers over time?

To test Hypotheses 14 and 15, I conducted path analyses. Due to the violations of the assumptions of homoscedasticity and multivariate normality in the data, the path models were fit using robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic (Tomarken & Waller, 2005) and controlled for age, income, and education (T1). I first tested for structural invariance in a model that included overall PERMA+4, age, income, and education as predictors of life satisfaction and job satisfaction using combined data from both time points (Model 7) to determine if there was structural invariance across the two time points, gender, and race/ethnicity. For time, gender, and race, I then conducted model comparisons using likelihood ratio testing to compare Model 7 as an unconstrained model (allowed all coefficients to be freely estimated across groups) to a constrained model (fixed all coefficients to be equal across groups). The constrained models did not demonstrate a significantly worse fit to the data, indicating the presence of structural

invariance across time, gender, and race/ethnicity for Model 7, confirming no significant differences between T1 and T2, women and men, and White and BIPOC groups. The results of the model comparison are summarized in Table 18.

Table 18

Model 7 Structural Invariance Testing Results for Time, Gender, and Race

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Time									
Unconstrained	0		0			1	0	0	8712.35
Constrained	9.93	.94	8	9.93	8	.99	.02	.02	8705.66
Gender									
Unconstrained	0		0			1	0	0	8712.26
Constrained	13.33	.95	8	13.33	8	.99	.04	.02	8708.89
Race/Ethnicity									
Unconstrained	0		0			1	0	0	8691.19
Constrained	15.02	.95	8	15.02	8	.99	.05	.02	8689.47

Note. ** $p < .01$ *** $p < .001$. CFI = robust comparative fit index; RMSEA = robust root-mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion. Unconstrained models were saturated, yielding no degrees of freedom and a perfect fit to the data.

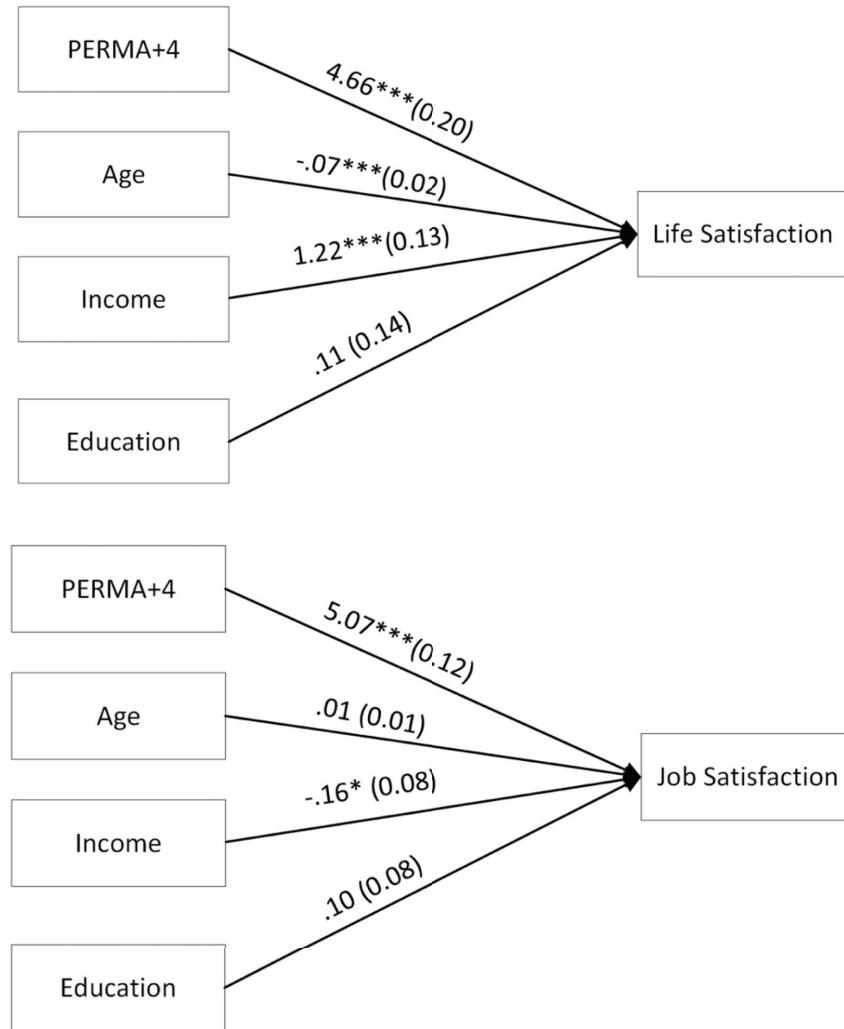
H14 and 15: Overall PERMA+4 (T1) Predicting Subjective Well-being (T1)

The path from overall PERMA+4 to life satisfaction was significant ($\beta = 4.66, p < .001$), supporting Hypothesis 14. In the model, the path from age ($\beta = -.07, p < .001$) and income ($\beta = 1.22, p < .001$) to life satisfaction were also significant, with age having a negative association with life satisfaction and income a positive association. The path from overall PERMA+4 to job

satisfaction was also significant ($\beta = 5.07, p < .001$), supporting Hypothesis 15. In the model, the path from income to job satisfaction was also significant ($\beta = -0.16, p < .001$), where income was negatively associated with job satisfaction. Results for H14 and H15 testing are depicted in Figure 10.

Figure 10

Path Analysis Results for H14 and H15



Note. * $p < .05$ ** $p < .01$ *** $p < .001$. displays standardized β coefficients (and standard errors) by path.

H11, 12, 13, 16, and 17: Moderators and Predicting PERMA+4 Over Time

To test Hypotheses 11, 12, 13, 16, and 17, I conducted cross-lagged panel modeling using path analysis. All path models were fit using robust maximum likelihood estimation with Huber-White robust standard errors and an asymptotic Yuan-Bentler scaled test statistic due to the violations of the assumptions of homoscedasticity and multivariate normality in the data (Tomarken & Waller, 2005). To test for interaction effects, I first created interaction terms for each predictor, outcome, and moderator variable (overall PERMA+4*work-life balance, overall PERMA+4*perceived supervisor support, life satisfaction* work-life balance, life satisfaction*perceived supervisor support, job satisfaction* work-life balance, job satisfaction*perceived supervisor support) to include in the models along with overall PERMA+4 as the predictor variable and life satisfaction and job satisfaction as the outcome variables. All models controlled for age, income, and education (T1) when estimating paths from interaction terms to the outcomes. Model 8 estimated autoregressive paths for overall PERMA+4, life satisfaction, and job satisfaction and cross-lagged paths from interaction terms at T1 to life satisfaction and job satisfaction at T2, but not vice versa. Model 9 further specified cross-lagged paths from life satisfaction and job satisfaction at T1 to overall PERMA+4 at T2 to estimate a saturated cross-lagged panel model but did not include interaction terms in these cross-lagged paths in order to ensure the models were nested to allow comparison using likelihood testing. I first compared Models 8 and 9. Model 9 was a significantly better fit to the data. I then created Model 10 by adding the interaction terms from life satisfaction and job satisfaction at T1 to overall PERMA+4 to Model 9. Model 11 further specified cross-lagged paths from life satisfaction and job satisfaction at T1 to overall PERMA+4 and interaction terms at T2 and exogenous covariances between overall PERMA+4 at T1 and life satisfaction and job

satisfaction at T1. Model 10 demonstrated a significantly better fit to the data than Model 11. Since the fit statistics of Model 9 demonstrated a slightly better fit than Model 10, Model 9 was used as the model for testing the hypotheses. Table 19 summarizes the model comparisons and Model 9 is depicted in Figure 11. All autoregressive effects were significant, indicating stability in overall PERMA+4, life satisfaction, and job satisfaction between time points.

Table 19

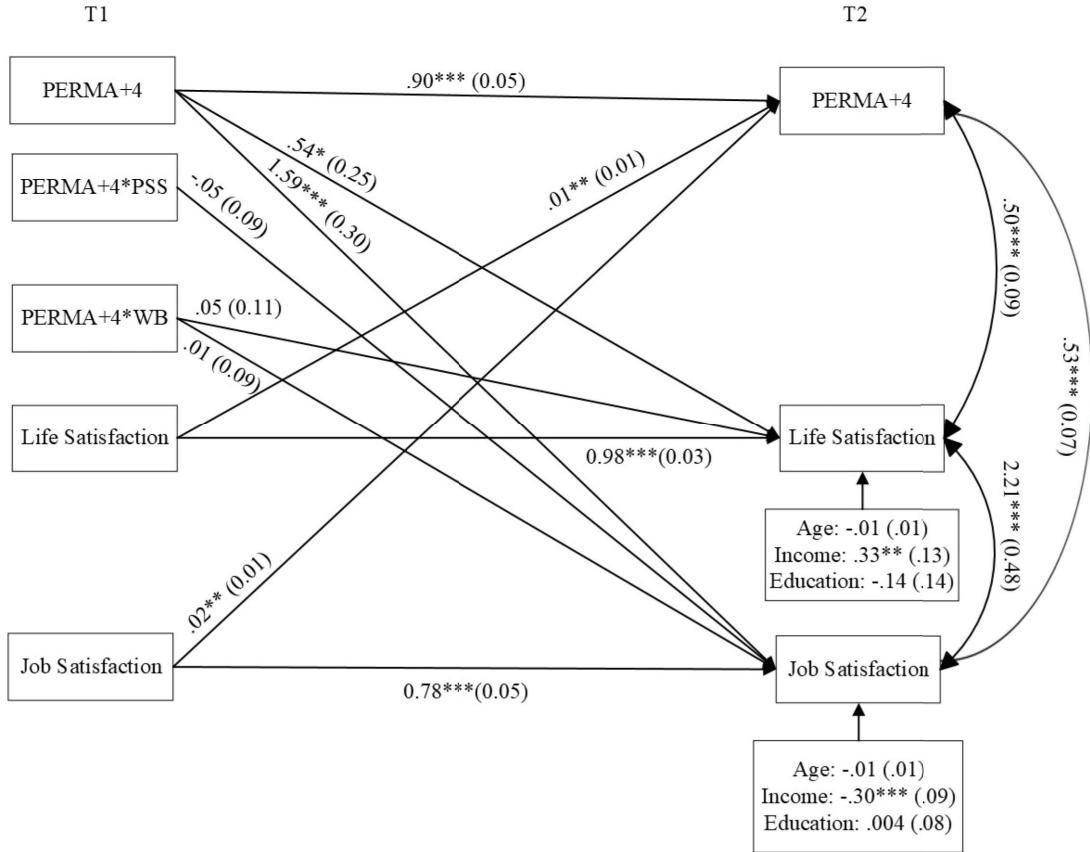
H11, H12, H13, H16, and H17 Cross-lagged Panel Model Comparisons

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Model 9	11.69	0.98	8			.99	.03	.01	4151.72
Model 8	28.09**	0.96	10	17.57***	2	.99	.07	.01	4163.23
Model 10	26.44*	0.96	14			.99	.05	.01	4156.39
Model 11	220.32***	1.29	39	175.48***	25	.92	.12	.16	9490.81

Note. * $p < .05$ ** $p < .01$ *** $p < .001$. CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

Figure 11

Cross-lagged Panel Model Path Analysis Results for H11, 12, 13, 16, and 17



Note. * $p < .05$ ** $p < .01$ *** $p < .001$. Model 9 displays standardized β coefficients (and standard errors) by path.

H11 and H12: Work-life Balance Moderating the Relationship Between PERMA+4 and Subjective Well-being. In Model 9 (see Figure 11), the cross-lagged effects from overall PERMA+4*work-life balance (T1) on life satisfaction (T2) were not significant. The cross-lagged effects from overall PERMA+4*work-life balance (T1) on job satisfaction (T2) were also not significant. Therefore, Hypotheses 11 and 12 were not supported.

H13: Perceived Supervisor Support Moderating the Relationship Between

PERMA+4 and Job Satisfaction. In Model 9 (see Figure 11), the cross-lagged effect from overall PERMA+4*perceived supervisor support (T1) on job satisfaction (T2) was not significant. Therefore, Hypotheses 13 was not supported.

H16 and 17: PERMA+4 (T1) predicting subjective well-being (T2). In Model 9 (see Figure 11), the cross-lagged effect from overall PERMA+4 (T1) on life satisfaction (T2) was significant ($\beta = .54, p < .05$), providing support for Hypothesis 16. In addition, the cross-lagged effect from overall PERMA+4 (T1) on job satisfaction (T2) was significant ($\beta = 1.59, p < .001$), providing support for Hypothesis 17. In addition, the cross-lagged effect from life satisfaction at T1 to overall PERMA+4 at T2 was significant ($\beta = .01, p < .01$) and from job satisfaction at T1 to overall PERMA+4 at T2 was significant ($\beta = .02, p < .01$).

Structural Invariance Testing Across Gender and Race. I also tested Model 9 for structural invariance across gender and race to determine if the model structure and paths were the same across groups for each variable. For each variable, I used likelihood ratio testing to compare Model 9 as an unconstrained model that allowed all coefficients to be freely estimated across groups) to a constrained model that fixed all coefficients to be equal across groups. The constrained model for race/ethnicity did not demonstrate a significantly worse fit to the data, indicating the presence of structural invariance across race/ethnicity for Model 9. Therefore, there were no significant differences in H11, H12, H13, H16, and H17 to H10 results across race/ethnicity. However, the constrained model for gender did demonstrate a significantly worse fit to the data. The results of the model comparison are summarized in Table 20.

Table 20

Model 9 Structural Invariance Testing Results for Gender and Race

Model	Scaled χ^2	Scaling Factor	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR	AIC
Gender									
Unconstrained	23.78	.89	21			.99	.02	.01	4171.46
Constrained	59.88	.89	39	36.13**	18	.99	.05	.01	4171.44
Race									
Unconstrained	23.89	.86	21			.99	.02	.01	4157.37
Constrained	46.59	.86	39	22.68	18	.99	.03	.01	4155.81

Note. ** $p < .01$ *** $p < .001$. CFI = robust comparative fit index; RMSEA = robust root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.

I then examined the paths for each gender group in the unconstrained model to identify any differences in the significance of any paths compared to Model 9. When broken down by gender group, the cross-lagged effect of overall PERMA+4 (T1) to life satisfaction (T2) was not significant for either women ($n = 197$) or men ($n = 209$), although it was significant for the entire sample. In addition, for men, the effect of income on life satisfaction was positive and significant ($\beta = .35, p < .05$), and on job satisfaction was negative and significant ($\beta = -.39, p < .01$) as it was for the entire sample, but were not significant for women. Finally, for men the cross-lagged effect of job satisfaction at T1 on overall PERMA4 at T2 was not significant, while it was significant for the entire sample and for women.

Summary of Study 2 Results

The aim of Study 2 was to quantitatively test the findings from Study 1 with a larger sample to determine if the findings were generalizable to full-time workers. In addition, this study aimed to establish quantitative evidence to provide insights into how the PERMA+4 building blocks improve the well-being of workers, what conditions enable PERMA+4 to

improve well-being, and whether PERMA+4 predicts SWB over time. Table 21 provides a summary of the Study 2 results.

Table 21

Summary of Study 2 Results

Analyses	Results
Confirmatory Factor Analysis	A nine-factor model for PERMA+4 was the best fit compared to a higher-order factor model. A bi-factor model did not converge.
Configural Measurement Invariance Testing	A nine-factor structure was stable over time, gender, and race.
Metric Measurement Invariance Testing	Factor loadings for all items were stable over time and race/ethnicity but not across gender.
Scalar Measurement Invariance Testing	Intercepts for all items were stable over time but not across gender and race/ethnicity.
Strict Measurement Invariance Testing	Residual correlations for all items were stable over time but not across gender and race/ethnicity.
Hypotheses Testing:	
H1: Positive emotions, physical health, and economic security will be the strongest significant positive predictors of life satisfaction among the PERMA+4 building blocks.	Not supported. Positive emotions was only a significant predictor of life satisfaction among women.
H2: Engagement, meaning, and accomplishment will be the strongest significant positive predictors of job satisfaction among the PERMA+4 building blocks.	Partially supported. Meaning was the only significant positive predictor of job satisfaction, although positive emotions was also a significant positive predictor.
H3: Positive relationships will be a significant positive predictor of positive emotions.	Supported
H4: Meaning will be a significant positive predictor of positive emotions.	Not supported

H5: Accomplishment will be a significant positive predictor of positive emotions.	Not supported
H6: Economic security will be a significant positive predictor of positive emotions.	Not supported
H7: Environment will be a significant positive predictor of positive emotions.	Not supported
H8: Engagement will be a significant positive predictor of accomplishment.	Not supported
H9: Positive relationships will be a significant positive predictor of accomplishment.	Not supported
H10: Physical health will be a significant positive predictor of accomplishment.	Not supported
H11: Work-life balance will be a moderator that positively enhances the positive relationship between PERMA+4 and life satisfaction.	Not supported.
H12: Work-life balance will be a moderator that positively enhances the positive relationship between PERMA+4 and job satisfaction.	Not supported.
H13: Perceived supervisor support will be a moderator that positively enhances the positive relationship between PERMA+4 and job satisfaction.	Not supported.
H14: PERMA+4 (T1) will be a significant positive predictor of life satisfaction (T1)	Supported
H15: PERMA+4 (T1) will be a significant positive predictor of job satisfaction (T1)	Supported
H16: PERMA+4 (T1) will be a significant positive predictor of life satisfaction (T2)	Supported
H17: PERMA+4 (T1) will be a significant positive predictor of job satisfaction (T2)	Supported

Exploratory Analyses

PERMA+4 explained 46% of the variance in life satisfaction at T1 and 40% of the variance in life satisfaction at T2.

PERMA+4 explained 88% of the variance in job satisfaction at T1 and 74% of the variance in job satisfaction at T2. When positive emotions was removed, the model explained 76% of the variance in job satisfaction at T1 and 68% of the variance in job satisfaction at T2.

Unexpected Results

Positive emotions (T1) was a significant positive predictor of accomplishment (T2)

Accomplishment (T1) was a significant positive predictor of physical health (T2)

Life satisfaction (T1) was a significant positive predictor of overall PERMA+4 (T2)

Job satisfaction (T1) was a significant positive predictor of overall PERMA+4 (T2)

Life satisfaction (T1) was a positive predictor of mindset (T2)

Job satisfaction (T1) was a positive predictor of positive emotions, engagement, positive relationships, meaning, accomplishment, physical health, work environment, and mindset at T2

Note: For RQ4, T2 is two weeks after T1. For hypotheses testing, all findings were consistent across gender, except for H1, and across race/ethnicity.

Study 2 Discussion

This study quantitatively tested the findings from Study 1 and investigated the largest PERMA+4 contributors to SWB, whether positive emotions and accomplishment are outcomes of other PERMA+4 building blocks, whether work-life balance and perceived supervisor support

are moderators that enable PERMA+4 to improve SWB, and whether PERMA+4 predicts SWB over time. I will briefly discuss the implications of Study 2 findings, which will be further elaborated in the general discussion.

Hypothesis 1 was not supported because none of the individual building blocks at T1 were found to predict life satisfaction at T2 when all the building blocks were included in the same model, including the hypothesized building blocks of positive emotions, physical health, and economic security. This finding was surprising because H16 was supported where overall PERMA+4 at T1 predicted life satisfaction at T2. In addition, previous research on PERMA has found that specific building blocks contributed to life satisfaction when they were included in the same model (Kern et al., 2014). One potential reason could be due to overall PERMA+4 having more statistical power as a predictor in a simpler model. However, when analyzed by gender groups, positive emotions was found to be a positive predictor of life satisfaction for women but not men, implying that gender is a moderator of the relationship between positive emotions and life satisfaction. This finding is consistent with what I found earlier in my systematic literature review where I conducted a meta-analysis and a MASEM that found positive emotions was the strongest predictor of life satisfaction based on correlation data from a small sample of six studies. However, these meta-analyses were based on a small sample size of studies and cross-sectional data, while this study tested the relationship across two time points to determine a potential directional relationship.

Hypothesis 2 was only partially supported, where meaning was found to be a significant predictor of job satisfaction two weeks later but not engagement or accomplishment. In addition, positive emotions was also found to be a predictor of job satisfaction. This finding implies that when full-time workers have higher levels of meaning and positive emotions, they lead to more

job satisfaction. This is consistent with previous research that found that having a purpose (Chang et al., 2022) and experiencing more positive emotions (Lanham et al., 2012) positively predicted job satisfaction among health professionals.

When testing relationships among PERMA+4 building blocks for Hypotheses 3 to 10, only positive relationships was found to be a significant positive predictor of positive emotions two weeks later, supporting Hypothesis 3, suggesting that when full-time workers have more positive relationships they lead to more positive emotions. Hypotheses 4 through 7 were not supported where positive emotions was not found to be an outcome of meaning, accomplishment, economic security, and environment implying that these building blocks do not lead to more positive emotions for full-time workers. In addition, Hypotheses 8 to 10 were not supported because accomplishment was also not found to be an outcome of engagement, positive relationships, and physical health. However, relationships among the PERMA+4 building blocks that were not hypothesized were also discovered. Accomplishment at T1 was a significant predictor of physical health at T2. In addition to being an outcome of positive relationships, positive emotions was also a significant positive predictor of positive relationships implying a potential bidirectional relationship between the two variables. Positive emotions was also found to be an antecedent and significant positive predictor of accomplishment and environment two weeks later, rather than an outcome, which is consistent with the broaden and build theory of positive emotions that describes how positive emotions contribute to well-being and the building of personal resources that create positive upward spirals of well-being (Frederickson, 2001).

For Hypotheses 11 to 13, work-life balance and perceived supervisor support were not found to enhance the relationship between PERMA+4 and SWB. The presence of work-life balance did not enhance the positive relationship between overall PERMA+4 and life satisfaction

or job satisfaction and perceived supervisor support was also not a moderator of the relationship between overall PERMA-4 and job satisfaction. However, both variables were significantly correlated with life satisfaction and job satisfaction at T1, T2, and across time points. This implies that work-life balance and perceived supervisor support may be antecedents or predictors of SWB but not moderators of the relationship between PERMA+4 and SWB. However, this implies that these two variables are still important for well-being, which has implications for the design of workplace practices and interventions to support employee well-being. Because they are predictive, they can still be considered important conditions for well-being at work.

Hypotheses 14 through 17 were also supported where overall PERMA+4 was a significant predictor of life satisfaction and job satisfaction cross-sectionally at T1 and T2 and two weeks later. These findings imply that higher levels of PERMA+4 overall leads to more job and life satisfaction and vice versa. This finding is consistent with previous research on PERMA and PERMA+4. It provides additional evidence for PERMA+4 as a strong predictor of SWB, with this study being one of the first to go beyond a cross-sectional association to provide evidence for the potential directionality of the effect of PERMA+4 on SWB across a two-week period. However, it should be noted that when examined by gender, overall PERMA+4 at T1 did not predict life satisfaction at T2 for men or women. This may be due to the smaller sample size of these subgroups contributing less power to the analysis. Overall, PERMA+4 at T1 was still predictive of job satisfaction at T2 when broken down by gender, which may be due to the large effect size of this relationship that was still detected among the smaller subgroups.

There were also additional findings from this study that were not hypothesized but provided additional potential insights into the relationship between PERMA+4 and SWB. Both life satisfaction and job satisfaction at T1 were significant positive predictors of overall

PERMA+4 at T2. In addition, SWB at T1 was also found to be a significant predictor of individual building blocks at T2. Life satisfaction at T1 was predictive of mindset two weeks later. Job satisfaction was also found to be a significant predictor of positive emotions, engagement, positive relationships, meaning, accomplishment, physical health, work environment, and mindset two weeks later. These findings provide evidence of a potential bidirectional relationship between PERMA+4 and SWB, where more SWB also leads to more PERMA+4. This would align with previous research that found certain building blocks to be outcomes of SWB, such as physical health and better social relationships (Diener, 2018). Higher levels of SWB have also been found to lead to more positive functioning in life and at work (Diener, 2017), which in turn could enable workers to be better able to build even more of their PERMA+4 building blocks.

In addition, exploratory multiple regression analyses found that PERMA+4 explained 46% of the variance in life satisfaction at T1 and 40% of the variance in life satisfaction at T2. In addition, PERMA+4 explained 88% of the variance in job satisfaction at T1 and 74% of the variance in life satisfaction at T2. However, some similarities in the scale items that measured positive emotions and job satisfaction may have contributed to an overlap between these two variables, so I also conducted the same analyses but removed positive emotions as a predictor in the model at T1 and found that this model explained 76% of the variance in job satisfaction at and 68% of the variance in job satisfaction. These findings suggest that while PERMA+4 is predictive of both life satisfaction and job satisfaction, it is a highly predictive framework for job satisfaction. However, the limitations of these exploratory analyses should be noted. Multiple regression doesn't account for temporal precedence between predictor and outcome variables or the relationships among all of the predictor and outcome variables at each time point. In addition,

the data did not meet all the assumptions for linear regression because it was not multivariate normal and heteroscedastic.

Finally, this study also contributed to the validation of the PERMA+4 scale with full-time workers in the United States. A CFA and measurement invariance testing confirmed a nine-factor structure of PERMA+4 that was stable across time, gender, and race/ethnicity, providing further evidence that the nine building blocks are distinct, but also the first time this was confirmed across time, gender, and race/ethnicity. However, the initial Positive Functioning at Work scale development confirmed that a nine-factor, higher-order, or bi-factor model demonstrated a good fit (Donaldson & Donaldson, 2020), so future research should be conducted to further validate the scale with other larger samples to ensure adequate power to confirm the possibility of a higher order or bi-factor model of PERMA+4.

Chapter 5: General Discussion

Since the introduction of PERMA by Martin Seligman in 2011, his original well-being theory has sparked numerous research studies and evolved into a more comprehensive PERMA+4 framework that describes the building blocks that contribute to well-being (Donaldson & Donaldson, 2020). Previous research has established the PERMA+4 building blocks as predictors of SWB with moderate to strong positive associations with one another (Cabrera & Donaldson, 2024). The aim of this research was to provide a more nuanced understanding of the PERMA+4 building blocks and how they improve well-being. More specifically, this research sought to answer four research questions to understand: (1) which building blocks contribute the most to SWB, (2) how the building blocks are related to one another, (3) whether there are enabling conditions that help PERMA+4 improve SWB, (4) and whether PERMA+4 improves SWB over time.

First, a systematic review of the empirical literature on PERMA and PERMA+4 provided exploratory insights into previous research that answered the research questions. For Research Question 1, positive emotions was among the top three building blocks most strongly correlated with life satisfaction in six studies followed by meaning, accomplishment, and positive relationships. In one study that used multiple regression analysis, meaning was the only significant building block (Kern et al., 2014). A meta-analysis of the correlations from these six studies found that positive emotions, meaning, and accomplishment to be the three largest predictors of life satisfaction across studies and a MASEM analysis dound that positive emotions, relationships, and accomplishment significantly contributed to life satisfaction. These exploratory findings suggested that positive emotions, relationships, meaning, and accomplishment may be the strongest predictors of SWB. For Research Question 2, 16 empirical

studies on PERMA and PERMA+ 4 found significant positive associations among all the building blocks ranging from small to large. For Research Question 3, the review did not uncover any empirical studies that looked at moderators of the relationship between PERMA or PERMA+4 and SWB and for Research Question 4, there were no empirical studies that looked at PERMA+4 as a predictor of SWB over time.

Results from Study 1 found that based on interviews that explored workers' experiences with the PERMA+4 building blocks, the most important building blocks for life satisfaction were viewed as positive emotions, consistent with the findings of the systematic review, but physical health and economic security were also viewed as most important for life satisfaction. Overall, this finding is aligned with previous research on SWB that found positive emotions, health, and financial satisfaction to be predictors of SWB. The most important building blocks for job satisfaction were viewed as engagement, meaning, and accomplishment, consistent with previous studies that found engagement to be a strongly associated with job satisfaction (Kern et al., 2014; Maeran & Cangiano, 2013), meaning to be a strongly associated with job satisfaction (Dreer, 2021), and accomplishment to be strongly associated with job satisfaction (Dreer, 2021; Kern et al., 2014). In addition, positive emotions were viewed as an outcome of positive relationships, meaning, accomplishment, economic security, and environment, and accomplishment was seen as an outcome of engagement, positive relationships, and physical health. These relationships among the building blocks are consistent with research caravans (Hobfoll, 2011), providing insights into how some of the building blocks may work together to improve well-being. Having work-life balance was also seen as an enabling condition for PERMA+4 to improve both job satisfaction and life satisfaction, while having a supportive supervisor was viewed as an enabling condition for PERMA+4 to improve job satisfaction. These findings about enabling conditions

were consistent with research that has identified work-life balance (Sirgy & Lee, 2018) and perceived supervisor support (Kalliath et al., 2020; Newman et al., 2015) as contributors to worker well-being.

The aim of Study 2 was to test the findings from Study 1 quantitatively. In Study 2, CFA and measurement invariance testing confirmed a nine-factor structure for PERMA+4 that was stable over time, gender, and race/ethnicity. After testing hypotheses based on the findings of Study 1, Study 2 results found that PERMA+4 was a significant predictor of life satisfaction and job satisfaction two weeks later. Positive emotions and meaning were significant predictors of job satisfaction two weeks later, and positive emotions was a significant predictor of life satisfaction two weeks later among women. Positive emotions was also a significant predictor of positive relationships, accomplishment, and environment two weeks later. However, work-life balance and perceived supervisor support did not moderate the positive relationship between PERMA+4 and life satisfaction or job satisfaction. The results of Study 2 contribute to the validation of the PERMA+4 framework with full-time workers and provide a more detailed understanding of how the PERMA+4 building blocks of well-being contribute to the SWB of full-time workers. In addition, Study 2 results build on previous research that established PERMA+4 as a cross-sectional predictor of SWB by confirming that PERMA+4 is a positive predictor of both life satisfaction and job satisfaction two weeks later.

In addition, Study 2 also yielded unexpected findings that were not hypothesized. Both life satisfaction and job satisfaction at T1 were significant positive predictors of overall PERMA+4 at T2. In addition, SWB at T1 was also found to be a significant predictor of individual building blocks at T2. Life satisfaction at T1 was predictive of mindset two weeks later. Job satisfaction was also found to be a significant predictor of positive emotions,

engagement, positive relationships, meaning, accomplishment, physical health, work environment, and mindset two weeks later. These findings provide evidence of a potential bidirectional relationship between PERMA+4 and SWB where more SWB also leads to more PERMA+4, consistent with previous research on SWB where building blocks like physical health and better social relationships, as well as higher levels of positive functioning, have been established as outcomes of SWB (Diener, 2017; Diener, 2018). Exploratory analyses also found that PERMA+4 explained 88% of the variance in job satisfaction at T1 and 74% of the variance in life satisfaction at T2, providing evidence that PERMA+4 is a highly predictive framework for job satisfaction.

Theoretical Contributions

This research contributes to and builds on the body of evidence that supports the PERMA+4 framework as a predictor of well-being. A recent systematic review of the PERMA and PERMA+4 literature confirmed that PERMA and PERMA+4 are strong predictors of well-being. However, the quantitative research to date on PERMA and PERMA+4 has been based on cross-sectional research (Cabrera & Donaldson, 2024). This dissertation went beyond cross-sectional research to establish the directional relationship of PERMA+4 as a predictor of SWB over time, confirming PERMA+4 as an antecedent of life satisfaction and job satisfaction. In addition, this research also contributes to the research literature on SWB, specifically cognitive SWB (life satisfaction) and work-domain-specific cognitive SWB (job satisfaction), by confirming antecedents of SWB. This research also contributes to our understanding of what impacts the well-being of workers. From a resource perspective of SWB and in line with COR theory, this study provides additional empirical evidence that the PERMA+4 building blocks are important resources that contribute to well-being and that workers need to build, protect, and

maintain them (Diener et al., 2018; Hobfoll, 1989; Kahneman, 1999). The findings of this study provide more nuanced insights that further our understanding of why these resources are important for worker well-being.

Strengths & Limitations

This research was one of the first mixed-methods investigations of PERMA+4 that collected qualitative data to gain insights about how PERMA+4 relates to the lived experience of workers and their well-being and then tested the findings quantitatively. In addition, this research contributed to the quantitative research literature on PERMA and PERMA+4 by going beyond establishing the building blocks as cross-sectional predictors of SWB to conduct a two-wave panel study with a two-week lag using cross-lagged panel model path analyses to establish evidence for the directionality of these relationships over time. The temporal separation between the measurement of predictor and outcome variables also reduces common method bias (Podsakoff et al., 2003).

However, this research also has several limitations that should be noted. Both studies relied on convenience sampling rather than random sampling, so there are limitations in the generalizability of the findings, which may not be representative of all full-time workers. The interpretation of any findings should be limited to populations with characteristics that are similar to those of the samples in this study. In addition, participants volunteered for this research, which may have created self-selection bias, where the study may have attracted more volunteers with certain characteristics (Babbie, 2016). For example, Study 1 participants may have volunteered to be interviewed because they are more interested in the topic of well-being or more open to talking about their lives than the general population (Robinson, 2014). Both studies also relied on participant self-reporting, which is subject to self-report bias (Donaldson & Grant-

Vallone, 2002). To minimize self-report bias, interview participants were assured of their confidentiality and encouraged to share their opinions, assuring there were no right or wrong answers. The collection of survey data was also confidential, where no identifying information was collected and participants were encouraged to answer honestly.

Since Study 1 findings were based on qualitative data and a small sample of workers, those findings are also not generalizable to a larger population (Creswell, 2007), which is why Study 2 tested those findings with a larger sample of full-time workers to determine if they were generalizable to full-time workers in the United States. The limitations of Study 2 should also be noted. Although the design went beyond cross-sectional research to collect data at two time points and the cross-path panel model path analysis results confirmed the potential directionality of the relationships between variables, this research was correlational and not experimental, so causality cannot be assumed, and the directionality of relationships cannot be definitively confirmed. In addition, the collection of data using one method is also subject to common method bias, although this was minimized through the temporal separation between the collection of predictor and outcome variables (Podsakoff et al., 2003). Finally, it should also be noted that although the PERMA+4 scale demonstrated reliability overall and for most of the building blocks, Cronbach's alpha for the environment subscale ($T1 \alpha = .59$, $T2 \alpha = .62$) was lower than is considered below acceptable. All the limitations of this research provide directions for future research, which will be discussed in the next section.

Practical Implications

The findings of this research also contribute to evidence-based practice by providing a more nuanced understanding of how PERMA+4 can improve the SWB of workers, with practical implications for workers and organizations. PERMA+4 provides a pragmatic framework that

organizations can add to their toolbox of evidence-based tools to support and improve their employees' well-being that can be used alone or in combination with other established theories and frameworks depending on the needs and context of an organization, such as JD-R (Demerouti et al., 2001) and SDT (Deci & Ryan, 2000). Ideally, the PERMA+4 framework can be applied to inform organizational, management, and work practices using a systems-informed approach (Kern et al., 2020) to support worker well-being by employees. For example, organizations can intentionally develop the PERMA+4 building blocks to design a work environment, organizational culture, and management practices that help workers experience more positive emotions, experience more flow, build positive relationships with their colleagues, connect their work to their sense of purpose, provide a sense of accomplishment, support their physical health, develop a growth mindset, feel physically safe and comfortable at work, and have financial security. The PERMA+4 framework can also be used to design employees' work to support their building blocks of well-being. In addition to informing job design, the practice of job crafting (Wrzesniewski & Dutton, 2001) can be used by workers to optimize their PERMA+4 building blocks. Leaders and managers can also play a critical role in building the PERMA+4 building blocks of their followers by caring about and supporting their well-being. For example, the PERMA-lead model is an approach for positive leadership behaviors based on the PERMA model (Ebner, 2020) that can be expanded to include the +4 building blocks to make it even more comprehensive. Organizations can also first measure the PERMA+4 building blocks as part of a needs assessment that includes employee well-being using the nine-item PERMA+4 short scale (Donaldson et al., 2023) and then use that data to target specific building blocks among their employees. The research literature also offers numerous evidence-based positive psychology interventions (PPIs) that have been proven effective at improving well-being

(see Donaldson et al., 2021 for examples) that can be adapted to target the PERMA+4 building blocks and to the context of full-time workers to improve their well-being. For example, training interventions that teach workers skills they can use in their work and personal lives to develop and support their PERMA building blocks, such as practicing gratitude, have also been found to be effective at improving well-being (Donaldson et al., 2021 Neumeier et al., 2017) and can be expanded to include the skills for the more comprehensive PERMA+4 framework. Based on a review of PPIs that were most effective in improving well-being based on high-quality experimental research, Donaldson et al. (2021) recommend incorporating learning, practice, reflection, relatedness, and planning into the design of well-being PPIs. In my literature review, I also discuss the mechanisms for how the PERMA+4 building blocks improve well-being, which can also be used to inform organizational practices and well-being interventions.

Finally, this research also found that work-life balance was important to full-time workers and a predictor of work well-being and should also be supported by organizations and managers who want to support their employees' well-being. Based on the findings of Study 1, some ways employees can be supported with work-life balance are to provide them with opportunities for breaks and flexible work, access to childcare, and help them maintain boundaries between work life and personal life.

Future Research

The findings of this dissertation can serve as the basis for future research to further explore how the PERMA+4 building blocks improve SWB. First, since the outcome of SWB in these studies focused on the cognitive aspect of SWB, future research exploring the relationships in this study can also focus on the outcome of affective SWB both in general and at work since there are distinct differences between cognitive and affective SWB and their relationships with

other variables (Diener et al., 2018). However, this research would need to consider and account for the conceptual overlap between the building block of positive emotions and the outcome of positive affect. In addition, more research can explore whether SWB is also a predictor of PERMA+4. Finally, more research can be conducted to further confirm the validity of the PERMA+4 scale with larger and different samples to replicate the findings of the CFA and measurement invariance testing from this research and to explore whether a higher-order factor or bifactor model also fit, as was found in the original scale validation (Donaldson & Donaldson, 2020).

The methodological limitations of this research also provide directions for future research. Future research can go beyond relying on self-reporting to more objectively measure and further test the PERMA+4 building blocks as predictors of well-being (Donaldson et al., 2021). The research questions and hypotheses can also be tested using experimental methods to establish causality in the relationships identified in the research findings. Future research should also further explore the research questions posed by this study using random sampling and different samples across various industries and cultures. In addition, since Study 2 collected data at two time points separated by two weeks, the understanding of how PERMA+4 impacts SWB over time can also be further by more longitudinal methods that include additional time points and different timeframes using a variety of methods and analyses to contribute a better understanding of the how PERMA+4 contributes to SWB over time.

Finally, given the practical implications of this research to inform the design of evidence-based work practices and interventions to support and improve the well-being of workers, future research can also focus on intervention design based on best practices and the evaluation of these

interventions to determine their effectiveness using rigorous experimental methods (Donaldson et al., 2021).

Conclusion

The PERMA+4 building blocks have been established as predictors of SWB in the empirical literature. This mixed-methods research further explored the PERMA+4 building blocks and their relationship with well-being among full-time workers by exploring which building blocks are the strongest predictors of SWB, what are the relationships among the PERMA+4 building blocks, whether having work-life balance or supervisor support were moderators that help PERMA+4 improve SWB, and whether PERMA+4 predicts SWB over time. Study 1 provided rich qualitative insights into how workers perceive and experience PERMA+4 and how these building blocks affect their well-being in their lives and at work. Study 2 quantitatively tested the Study 1 findings and went beyond cross-sectional research to provide evidence that positive emotions are an important predictor of life satisfaction among women, meaning is an important predictor of job satisfaction, positive relationships positively predicts positive emotions, and overall PERMA+4 is a predictor of both life satisfaction and job satisfaction two weeks later. Finally, this study also contributed to the validation of the PERMA+4 model, confirming a nine-factor structure that was stable across time, gender, and race/ethnicity. The findings of this research contribute to a better understanding of how PERMA+4 improves well-being and can help inform the design of workplace practices and interventions for workers that can better target the PERMA+4 building blocks to improve well-being and create workplace conditions to address the important issue of worker well-being and better support the well-being of workers.

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Appendix A

Interview Protocol

Date:

Time:

Introduction

- Thank you for agreeing to be interviewed for this research study.
- My name is Vicki Cabrera, a doctoral candidate in Positive Organizational Psychology at Claremont Graduate University.
- The aim of this study is to better understand what contributes to the well-being of full-time workers. I'm interested in learning about your work and life experiences and how they contribute to your well-being.

Logistics

- I expect the interview to take approximately one hour. It involves watching a short video and then answering a set of questions.
- After the completion of the interview, I will email you a \$25 Amazon gift card as a token of appreciation for participating.
- The information you share with me will also be confidential and your name will not be appear in any files, papers, or reports.
- Your participation is completely voluntary, so please feel free to skip any of the questions or stop the interview at any time.
- There are also no right or wrong answers so please feel free to answer honestly. I am interested in your opinions, perspectives, and experiences. It's helpful if you can be as detailed as possible.

Recording

- Before we begin, I would like to ask you if you would be okay with me audio recording through Zoom to make sure I capture everything? I will be the only who has access to these files and the audio recordings will be destroyed after the study. All files will also be kept in a secure location. (*Start recording*)
- Do you have any questions before we begin?

Icebreaker/Rapport Building

1. First, can you tell me about your job and the work that you do?

- Probes: e.g. organization, position, type of work
- Do you work remotely, hybrid, or in person?

PERMA+4 Video

- Now, I'm going to play a short video for you about the science of well-being. I'll then ask you questions about what you learn in the video. Don't worry about memorizing definitions. (*Play video that describes the 9 building blocks of well-being*)

Interview Questions

For each question, probe for more details as needed (e.g., “why,” “tell me more,” “please elaborate,” “can you provide an example?")

We’re going to explore these building blocks of well-being together. I’m interested in how you experience them in your life and work.

First, I’m going to ask you a series of questions showing you different pairs of building blocks (*share building block definitions*).

1. RQ2: Let’s start with positive emotions and positive relationships. I want you to think about your experiences in life and at work. In your experience, are these 2 things related to one another for you?

- Follow-up question:
 - Why or why not?
- *Repeat #1 for the other combinations of building blocks*

2. RQ1: Now, we’re going to look at all of the building blocks and I want you to think about your life in general (*share screen to show definitions for the 9 building blocks*). For you, which of the 9 building blocks do you think is most important for you to feel a sense of life satisfaction?

3. RQ2: Now, we’re going to look at different pairs of building blocks again. *Repeat question 1 for the other combinations of building blocks.*

4. RQ1: Now, we’re going to look at all of the building blocks together again and I want you to think about your work (*show definitions for the 9 building blocks*). Which of these building blocks do you think is most important in order to feel a sense of job satisfaction?

Check in – how are you doing?

5. RQ3: We’re going to look at all of the building blocks together again (*show definitions for the 9 building blocks*). Research has shown that the building blocks have a positive effect. When all of them are present at work, job satisfaction tends to be higher. But there may be certain conditions or circumstances at work that can help enhance this positive effect. Are there any conditions or circumstances at work that could enhance this positive effect for you?

- Probes (give examples if needed):
 - Work environment
 - Policies
 - Management or leadership
 - Culture
 - Work itself
 - Other factors

6. RQ2: Now, we're going to look at different pairs of building blocks again. *Repeat question 1 for the other combinations of building blocks (Remind them to think about personal or work)*

Check in – how are you doing? This is the last leg of the interview.

7. RQ2: Now, we're going to look at different pairs of building blocks again. *Repeat question 1 for 6 combinations of building blocks (Remind them to think about personal or work)*

8. Now for my last question, we're going to look at all of the building blocks together again. Again, research has found that the building blocks have a positive effect. When all of them are present in your life, life satisfaction tends to be higher. But there may be certain conditions or circumstances in your life that can help enhance this positive effect? Can you think of any?

- Probes (give examples if needed):
 - Home
 - Family
 - Friends
 - Society
- Follow up question:
 - Do you think there might be other circumstances or conditions at work that might help enhance this positive effect on life satisfaction for you?

9. Is there anything you want to add that we didn't talk about?

Respondent Validation

- I want to make sure all the data I collect in this study is an accurate representation of full-time workers' views and experiences. Would you be willing to volunteer to review a brief summary of my findings via email and let me know via email if you think it is a good representation of the experience and well-being of workers? Out of those who volunteer, I will select two people at random to do this within the next couple of weeks and as a token of appreciation, they will receive a \$10 Amazon gift certificate.

Participant Recruitment

- I'm looking for more participants for this study. Do you know anyone else who might be interested in participating that I could interview?

Closing

- Thank you for taking the time to participate in this interview.
- As a token of appreciation for your time, I will email you a \$25 Amazon gift certificate today.
- Feel free to email me afterwards if you have additional thoughts you want to share.

Appendix B

Survey Measures

Satisfaction with Life Scale (Diener et al., 1985)

Five items will be used to measure Life Satisfaction using a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree).

Construct	Items
Life Satisfaction	In most ways my life is close to my ideal.
	The conditions of my life are excellent.
	I am satisfied with my life.
	So far I have gotten the important things I want in life.
	If I could live my life over, I would change almost nothing.

Short Version of Brayfield & Rothe (1951)'s Job Satisfaction Index (Agho et al., 1992)

Six items will be used to measure Job Satisfaction using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Construct	Items
Job Satisfaction	I am often bored with my job. (R)
	I feel fairly well satisfied with my present job.
	I am satisfied with my job for the time being.
	Most days I am enthusiastic about my work.
	I like my job better than the average worker does.
	I find real enjoyment in my work.

Positive Functioning at Work Scale (Donaldson & Donaldson, 2020)

Twenty-nine items will be used to measure overall PERMA+4 and each PERMA+4 building block using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Construct	Items
Positive Emotions	I feel joy in a typical workday.
	Overall, I feel enthusiastic about my work.
	I love my job.
Engagement	I typically become absorbed while I am working on something that challenges my abilities.
	I lose track of time while doing something I enjoy at work.
	When I am working on something I enjoy, I forget everything else around me.
Relationships	I can receive support from others when I need it.
	I feel appreciated by my workers.
	My colleagues bring out my best self.
Meaning	I understand what makes my job meaningful.
	My work is meaningful.
	I understand what makes my job meaningful.
	The work I do serves a greater purpose.
Accomplishment	I set goals that help me achieve my career aspirations.
	I typically accomplish what I set out to do in my job.
	I am generally satisfied with my performance at work.
Physical Health	I typically feel physically healthy.
	I am rarely sick.

	I can typically overcome sources of physical distress (e.g., insomnia, injuries, vision issues, etc.)
	I feel in control of my physical health.
Mindset	I believe I can improve my job skills through hard work.
	I believe my job will allow me to develop in the future.
	I have a bright future at my current work organization.
Economic Security	I am comfortable with my current income.
	I could lose several months of pay due to serious illness, and still have my economic security.
	In the event of a financial emergency, I have adequate savings.
Environment	My physical work environment (e.g., office space) allows me to focus on my work.
	There is plenty of natural light in my workplace.
	I can conveniently access nature in my work environment (e.g., parks, oceans, mountains, etc.).

Work-life Balance (Valcour, 2007)

Five items will be used to measure work-life balance (based on participants' overall assessment of satisfaction with their ability to meet work and personal/family demands (Valcour, 2007)) using a 5-point Likert-type scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

Construct	Items
Work-life Balance	The way you divide your time between work and personal or family life.
	The way you divide your attention between work and home.
	How well your work life and your personal or family life fit together.
	Your ability to balance the needs of your job with those of your personal or family life.

	The opportunity you have to perform your job well and yet be able to perform home-related duties adequately.
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Perceived Supervisor Support

Four items adapted from the Survey of Perceived Organizational Support (Eisenberger et al., 1986) and used by previous studies where “organization” was replaced by “supervisor” (e.g. DeConinck, 2010) will be used to measure Perceived Supervisor Support using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Construct	Items
Perceived Supervisor Support	My supervisor takes great pride in accomplishments.
	My supervisor really cares about my well-being.
	My supervisor strongly considers my goals and values.
	My supervisor is willing to help me if I need help.

Work Information

Demographic	Item	Response Options
Job Title	What is your current job title?	Open ended
Work Country	Do you work in the United States?	Yes No
Industry	Which of the following statements best describes the industry in which you are employed?	Administrative/Support Agriculture/Forestry/Fishing/Hunting Arts/Entertainment/Recreation Construction Education/Educational Services Finance/Insurance Government/Public Administration Health Care/Social Assistance

		Hospitality/Accommodation/Food Services Information/Information Services/Data Processing Legal Services Manufacturing Military Mining Professional/Scientific/Technical Services Real Estate/Rental/Leasing Religious Retail Trade Transportation/Warehousing Utilities Waste Management Wholesale Trade Other (please specify) _____
Coworkers	Do you have at least one coworker?	Yes No

Demographics

Demographic	Item	Response Options
Age	What is your age?	Open ended
Gender	What is your gender?	Man Woman Non-binary Prefer to self describe _____
Education	What is the highest level of education you have completed?	Some high school or less High school diploma or GED Some college, but no degree Associates or technical degree Bachelor's degree

		Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)
Race/ethnicity	Which race/ethnicity category below best describes you? (check all that apply)	American Indian / Native American / Alaska Native Asian / Asian American Black / African / African American Hispanic / Latino/a/x Pacific Islander / Native Hawaiian White / Caucasian Prefer to self describe _____ Prefer not to say
Income	What is your annual income? (as an individual in US dollars before taxes)	Less than \$25,000 \$25,000 - \$49,999 \$50,000 - \$74,999 \$75,000 - \$99,999 \$100,000 - \$149,999 \$150,000 - \$250,000 More than \$250,000

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