VALIDITY AND RELIABILITY OF THE FLOURISHING SCALE: LATVIAN VERSION

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Abstract. *The objective of this study was to assess the psychometric properties of the Latvian version of the Flourishing Scale (FS), created by Diener et al. (2010). FS is a brief self-report measure of the respondent's well-being and success in areas of relationships, self-esteem, purpose, and optimism. The scale provides a single score across 8 items. The original FS was translated to Latvian and then back to English. The Satisfaction with Life Scale and Meaning in Life Questionnaire was applied for testing the convergent validity of the FS. Participants of the study were 191 people, ranged in age from 19 to 68 (159 women, mean age M = 30.62, SD = 9.50). Reliability analysis, exploratory and confirmatory factor analysis (EFA and CFA) of the scale were performed. EFA indicated a one-factor structure. Results showed that the Latvian version of FS has good psychometric properties and demonstrated convergent validity. Testing of the original model by CFA resulted in acceptable fit indices.*
Keywords: *factorial validity, flourishing, Flourishing Scale, subjective well-being, well-being.*

Introduction

During the recent decade, the variety of measurements of well-being has grown, reflecting the general interest of positive psychology in understanding of what are the necessary components for human happiness (Linton, Dieppe, & Medina-Lara, 2016; Cooke, Melchert, & Connor, 2016). The differences in self-report measures for well-being stem from the conceptual and theoretical basis of how well-being is defined. There are two broader traditions in research on well-being, drawing distinction between concepts of eudaimonic and hedonic well-being, both of which are rooted in the ancient Greek philosophy of Aristotle (Aristotelis, 1985) and Epicures (Epikūrs, 2007). Hedonic well-being is understood as primarily involving pleasure. It tends to be more individualistic and is based upon how good one feels about life, and it is empirically measured by using, for instance, the Satisfaction with Life Scale (SWLS, Diener, Emmons, Larsen, & Griffin, 1985) assessing global evaluations of one's life. SWLS is a brief, easily administered, and widely used measure that is based on Diener's (1984) tripartite model of subjective well-being consisting of life

satisfaction (the cognitive component), positive affect, and absence of negative affect (affective components).

Meanwhile, eudaimonic well-being, as defined by Aristotle (1985), means happiness consisting of pleasure and virtue, the highest cultivation of personal character; it is a good life. While there is strong consensus on what variables constitute hedonic well-being (i.e., satisfaction, absence of distress, behaviors seeking these experiences, etc.), there is less agreement on the conceptualization of eudaimonic well-being. Psychologists have reframed Aristotle's formula for happiness in terms of pleasure and psychosocial meaning, involving pleasure but emphasizing meaningfulness and growth (Ryan & Deci, 2001). It tends to be more humanistic and based upon how meaningful one's life feels, besides to simply how good it feels and includes a positive attitude towards life as expressed by positive emotions, feelings of happiness, uplifting and satisfaction with life. Ryff's and Keyes's (1995) measure of Psychological Well-Being (PWB) represents this tradition and assesses feeling good about one's life on six dimensions: self-acceptance, environmental mastery, positive relationships, meaning in life, personal growth, and autonomy. Deci and Ryan (2000) in their self-determination theory (SDT) posited that happiness can be achieved by satisfying three specific types of human needs for autonomy, relatedness, and competence. Huta (2015) has outlined four common core elements of eudaimonic well-being that appear across all theories: authenticity and being one's true self, meaning and purpose in the broader context of one's ecosystem, excellence and striving for higher standards in life, and growth and actualization of one's potential.The implication, as noted by Kashdan et al. (2008), is that eudaimonic well-being is morally superior as compared to hedonic well-being and that happiness is just "the product (or perhaps a by-product) of the pursuit of self-realization rather than the objective being sought" (Waterman, 2007, 612).

Recently, however, this dualism in well-being research has been questioned, suggesting that instead of focusing on the distinction between eudaimonia and hedonism, we should treat them as different but complementary and highly related facets of the same phenomena (Kashdan, Biswas-Diener, & King, 2008; Giuntoli & Vidotto, 2020; Goodman, Disabato, Kashdan, & Kauffman, 2017; Sheldon, 2018). The concept of flourishing has been introduced to integrate the two approaches. Numerous definitions exist of flourishing, and different authors have introduced different sets of flourishing dimensions. Keyes (2002) suggests that flourishing is the presence of mental health and in measuring flourishing combines both eudaimonic (Ryff's six psychological well-being dimensions along with five dimensions of social well-being) and hedonic (happiness or life satisfaction) approaches. Seligman (2011) has developed the PERMA model suggesting that flourishing comprises five components: positive emotions, engagement, relationships, and meaning and

accomplishment (hence the PERMA acronym). Huppert and So (2013) have defined flourishing as a combination of feeling good and functioning effectively or "life going well", identifying ten features of positive mental functioning: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationship, resilience, self-esteem, and vitality. Sheldon (2018) proposed the Eudaimonic activity model of flourishing that distinguishes three aspects: eudaimonic practices, satisfying psychosocial experiences, and subjective well-being as defined by Diener et al. (1985). The first two elements in his model are a combination of the three needs of SDT (Deci & Ryan, 2000) and six dimensions of PWB (Ryff & Keyes, 1995).

The eight-item Flourishing Scale was designed by Diener et al. (2010) to measure social-psychological prosperity to complement the existing measures for subjective well-being by addressing the several universal human psychological needs addressed in humanistic psychology theories. The FS includes such components as positive relationships, contribution towards the well-being of others, purpose in life, competence, optimism, engagement, and self-esteem.

Since its development, FS has been validated across different cultural contexts, age groups, and languages (Tong & Wang, 2017, Schotanus-Dijkstra, Peter, Drossaert, Pieterse, Bolier, Walburg, & Bohlmeijer, 2016, Villieux, Sovet, Jung, & Guilbert, 2016, Sumi, 2014, Giuntoli, Ceccarini, Sica, & Caudek, 2017, Kyriazos, Stalikas, Prassa, Yotsidi, Galanakis, & Pezirkianidis, 2018, Silva & Caetano, 2013, Ramirez-Maestre, Correa, Rivas, Lopez-Martinez, Serrano-Ibáñez, & Esteve, 2107, Didino, Taran, Barysheva, & Casati, 2019).

There are several measures of psychological well-being adapted into Latvian, for instance, SWLS (Upmane, 2012) and Meaning in Life Questionnaire (Kolesovs, 2019). Research in Latvia reveals a significant correlation between satisfaction with life and perception of one's financial well-being: the higher the perceived financial well-being, the higher the estimated satisfaction with life and vice versa (Upmane, 2012; Kolesovs, 2017). The objective of the present study is to analyze the psychometric properties of the Latvian version of the FS, testing its validity, reliability, and factor structure, thus adapting a new measure of psychological well-being into the Latvian language.

Method

Participants

A sample of 191 adults (83% female, aged from 19 to 68 years, $M = 30.62$, $SD = 9,50$) were interviewed. The snowball convenience sample involved

psychology students (52%) and their friends or relatives, 63% were employed, 56% were either married or in a relationship.

Measures

The Flourishing Scale (FS; Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2010) is a 7-point Likert scale with 8 items (from strong disagreement to strong agreement) that measures participant's beliefs about such areas of their life as positive relationships, meaning, and purpose in life, as well as a sense of competence. Scores can range from 8 to 56 (demonstrating strong agreement on all scales).

Series of studies on the FS demonstrated reliability scores with Cronbach's alpha in the range of .78 - .95. The FS has revealed one strong factor with an eigenvalue of 4.24, accounting for 53% of the variance (Diener et al., 2010). The later adaptations of the FS in various languages demonstrated a similar one-factor structure of the scale (e.g., Didino et al., 2019; Ramírez-Maestre et al., 2017; Tong &Wang, 2017; Hone et al., 2014; Perera, Meade, & DiPonio, 2018).

The Satisfaction with Life Scale (SWLS; Diener et al., 1985). Five items assess the cognitive evaluation of life as desirable on a 7-point Likert scale with responses varying from strong disagreement to strong agreement. The adaptation of the scale in Latvian by Upmane (2012) was used. In the current study, the Cronbach's alpha of the SWLS was .87.

Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006). The ten-item MLQ measures the presence and searches for meaning and purpose in life. Only the 5-item presence subscale (MLQ-P) was used. Items are rated on 7-point Likert scale with responses varying from strong disagreement to strong agreement. The adaptation in Latvian demonstrated good internal consistency of the subscale (Kolesovs, 2019). In the current study, the Cronbach's alpha of the MLQ-P was .91.

Self-reported health status was assessed by a single item measurement of participant's self-assessment of physical health in comparison to other people of the same age on a 5-point scale from *very poor* to *very good*.

Self-reported economic well-being was assessed by a single item measurement of participant's self-assessment of their family's economic well-being on a 5-point scale from *missing even the most basic things* to *can afford anything I want*.

Procedure

The FS translation procedure consisted of two steps. Firstly, the English version of the FS was simultaneously translated into Latvian by independent translators. Secondly, the resulting Latvian version was back-translated and compared to the original English version.

All participants were informed of the aim of the study, personal anonymity, and the confidentiality of the survey. Data collection occurred in the winter of 2019.

Analyses of the data obtained were performed using the lavaan R package Version i386 3.5.2 and IBM SPSS Statistics Version 22.0.

Results

The data were analyzed in three steps: the exploratory factor analyses (EFA), the confirmatory factor analyses (CFA), and convergent validity analyses, which included the testing relationship of the FS with life satisfaction.

Exploratory factor analysis

The exploratory factor analysis (EFA) was performed applying principal component analyses extraction with *Varimax* rotation. Before performing EFA, the suitability of data for factor analysis was assessed. The Kaiser Meyer-Olkin value was .88, demonstrating a good level of sampling adequacy. Bartlett's Test of Sphericity reached statistical significance, confirming that data were factorable, $\chi^2(28) = 703.59$, $p<.001$. The principal components analysis revealed the presence of one factor with an eigenvalue above 1 (4.37), accounting for 55% of the variance. The factor loading ranged from .83 to .50. Therefore, only one factor characterized the FS (Table 1).

Table 1 Exploratory Factor Analysis of Flourishing Scale

Flourishing Scale item	Factor structure	
	Loading	h^2
FS1 I lead a purposeful and meaningful life	.77	.59
FS2 My social relationships are supportive and rewarding	.73	.54
FS3 I am engaged and interested in my daily activities	.74	.55
FS4 I actively contribute to the happiness and well-being of others	.50	.25
FS5 I am competent and capable in the activities that are important to me	.70	.49
FS6 I am a good person and live a good life	.79	.62
FS7 I am optimistic about my future	.80	.65
FS8 People respect me	.83	69
Factor and scale characteristics	Value	
Eigenvalue	4.37	
Explained Variance	55 %	
Cronbach's Alpha	.88	
M (SD)	42,27 (*7.60*)	

Confirmatory factor analysis

An eight-item, one-factor model, as identified by EFA was investigated. The initial model showed low level of fit to data $\chi^2(20) = 61.075$, $p < .001$. The original model's CFA = .90 and TLI =.86 indicated acceptable fit, but the RMSEA of .13 failed to reach the recommended values between .05 and .08, indicating a not well-fitted model. Given the high RMSEA value, the model was statistically modified by correlating errors between Item 2 and Item 4 (see Fig.1). This produced a better fitting model, with CFI =.94, TLI = .92, and RMSEA (.08), indicating satisfactory fit. These analyses confirm the unidimensional factor structure of the FS. Fit statistics for both models are reported in Table 2.
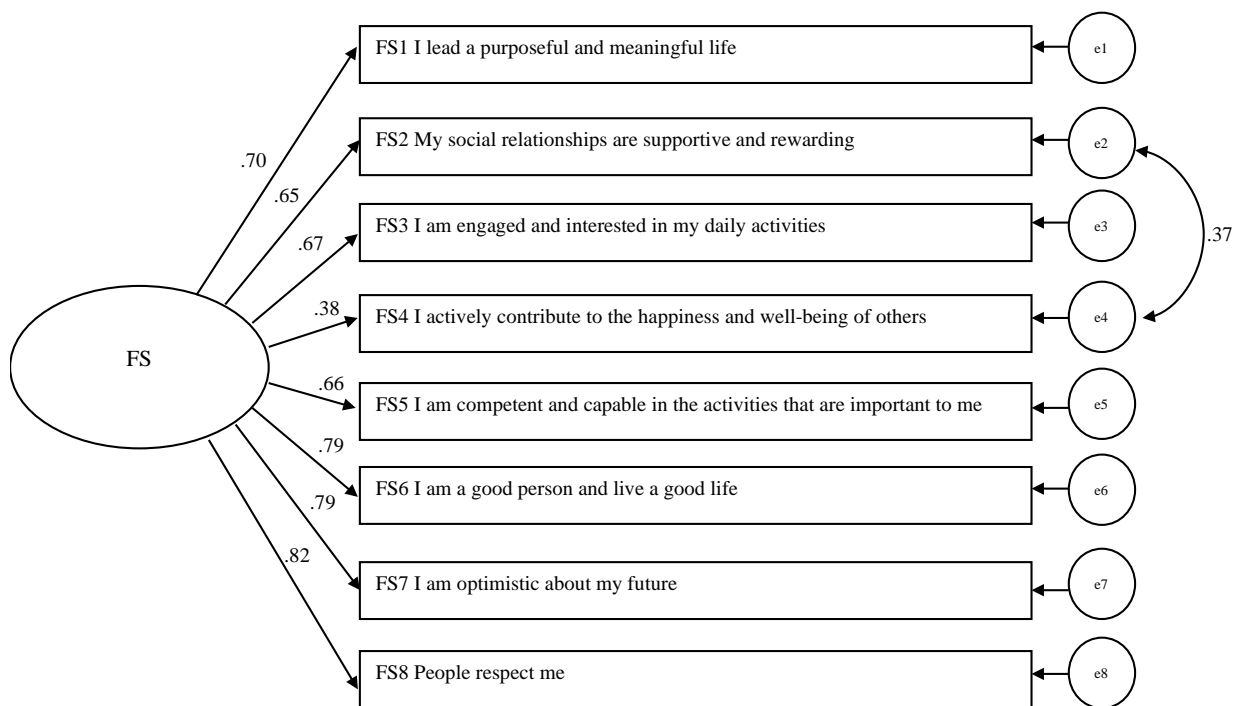
Figure1 Flourishing Scale: One Factor Confirmatory Factor Model

Table 2 Goodness of fit Statistics for the Tests of Factorial Validity of the Flourishing Scale

FS	χ^2	*df*	CFI	TLI	SRMR	RMSEA (90% CI)
Model 1	61.075	20	.896	.854	.063	.104
Model 2	43.301	19	.938	.909	.050	.82

Model 1 – original model; model 2 – Errors of Items 2 and 4's covary.

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Testing convergent validity

To investigate the convergent validity of the FS, we correlated single-item health status and economic well-being questions, SWLS, and MLQ-P with FS (see Table 3). There were strong, positive correlations between the FS and life satisfaction, as well as the presence of meaning and purpose in life. FS is positively, significantly associated with health and economic well-being. These results are consistent with published reports on FS (Diener et al., 2010, Tong & Wang, 2017, Villieux et al., 2016, Sumi, 2014, Silva & Caetano, 2013).

Table 3 **Correlations between the Flourishing Scale, SWLS, MLQ-P, Health and Economic Well-being**

Measures	FS	SWLS	MLQ-P	Health	Economic well-being
FS	-				
SWLS	.703**	-			
MLQ-P	.713**	.558**	-		
Health	.392**	.369**	.193*	-	
Economic well-being	.279**	.400**	.220**	.286**	-
** *p* < .01; **p* < .05					

Discussion and Conclusions

The objective of the current study was to adapt FS into the Latvian language and provide empirical evidence regarding its psychometric qualities. The results of exploratory and confirmatory factor analyses were consistent with findings of the Diener et al. (2010) original study and with those observed in other national or cultural samples (Villieux et al., 2016, Silva & Caetano, 2013, Tong & Wang, 2017, Sumi, 2014, Didino et al., 2019, Ramirez-Maestre, 2017).

Good reliability of the scale was indicated with Cronbach's alpha coefficient of .88 and it was consistent with the original FS (Diener et al., 2010). FS correlations with measures capturing well-being (SWLS, MLQ-P, health, and economic well-being) were strong and positive, demonstrating the scale's convergent validity. CFA supported the unidimensionality of the FS factor structure with acceptable factor fit.

Each item of the FS represents a distinct feature of well-being and psychosocial functioning. Nevertheless, as noted by Didino et al. (2019), some of the previous studies on FS allowed error covariance between items so that the acceptable values for the one-factor model fit indices in CFA could be reached. Errors between different items were correlated depending on the study (Hone Jarden, & Schofield, 2014, Howell & Buro, 2015, Perera et al., 2018,

Tong & Wang, 2017, Momtaz et al., 2016, Kyriazos et al., 2018), and with some of the correlation patterns overlapping in various studies. However, they have not been based on theoretical assumptions or further investigated and explained. We correlated errors between items 2 ("My social relationships are supportive and rewarding") and 4 ("I actively contribute to the happiness and well-being of others") to improve model fit. It suggests that there could be a factor that might account for the error variances of the two items. Didino et al. (2019) observed similar error correlations in the sample of older adults, with the addition of item 8 ("People respect me"), speculating that these items measure social relationships. In addition, this might also suggest culture-specific dimensions to flourishing. However, future analyses are required.

There are some limitations to our study. We have used a convenience sample of predominantly students (52%), with the mean age of 30,62 and the majority of them female (83%). Therefore, broader samples, representative of the adult population, could be studied in the future. The psychometric properties of FS should be examined further in different populations, for instance, adolescents or older adults. Furthermore, test-retest reliability of the Latvian version should be evaluated.

Overall, the present version of the FS is reliable and suitable for researchers and practitioners planning to study new aspects of well-being in Latvian cultural context.

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