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The dimensions of well-being: toward a structural hierarchy of psychological wellness

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Abstract

Multivariate analyses of twelve psychological constructs representing two most integrative theoretical models of well-being (hedonistic and eudaemonic) clearly established a robust hierarchical structure both on the scale as well as on the item level of data. The analyses yielded a very strong highest-order factor (general factor of well-being or gWB), two higher-order factors (broad factor of happiness and broad factor of meaning) and five first-order factors (satisfaction, negative emotionality, positive emotionality, relatedness, and growth). Consequently, a new integrative structural model of well-being was proposed. The results convincingly demonstrated a great redundancy of major measures of well-being and its tentative components. Additionally, the results confirmed very substantial relationship between the dimensions of well-being and dimensions of personality. The gWB is highly correlated with the general factor of personality (gP).

Key words

Subjective emotional well-being, psychological well-being, hierarchical structural model, personality

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Psychological research of well-being has deep historical roots in ancient philosophy and psychological antecedents in humanistic psychology (Ryan & Deci, 2001). In past decades, the empirical research of well-being substantially increased by merits of the movement of "positive psychology" and its predecessors (Seligman, 2002; Seligman & Csikszentmihalyi, 2000). In the frame of positive psychology, different theoretical models have been developed, including the models of subjective emotional well-being (Diener, 1984, 2000), psychological well-being, (Ryff, 1989; Ryff & Keyes, 1995), happiness (Myers, 1992), positive emotionality (Watson, Clark & Tellegen, 1988), optimism (Seligman, 1998), hope (Snyder, 1994), flow (Csikszentmihalyi, 1990), good-life (Baltes & Staudinger, 2000) and others. Nevertheless, the concept of well-being is related to practically all constructs within the positive psychology.

Two integrative theoretical approaches to well-being have been proposed recently, the hedonistic, connected with the concept of subjective (emotional) well-being (SWB), and eudaemonic, connected with the concept of psychological well-being (PWB) (Lent, 2004; Ryan & Deci, 2001). SWB refers to the pleasure and happiness feelings and encompasses both cognitive and affective dimensions, the first related to the life satisfaction and the second related to the (high) positive and (low) negative affect (Diener, 2000). PWB model stresses the importance of eudaemonic dimensions in the formation of well-being, including the feelings of life purpose, mastery, autonomy, personal growth, positive relatedness to others and self-acceptance (Ryff & Keyes, 1995). Deci and Ryan (2000; Ryan & Deci, 2001) proposed an additional model of well-being that integrates the SWB and PWB aspects: it emphasizes the role of the satisfaction of human needs, especially the needs for autonomy, relatedness and competence. Although conceptually distinct, the notions of well-being in the mentioned models have also strong common denominators. According to the empirical evidence, the dimensions of SWB and PWB correlate substantially within and between models, and also have very similar correlations with other psychological variables, being connected with well-being, especially with the personality dimensions (Musek, 2007).

The question might be raised therefore, how strong are the relations between the most used concepts of well-being and its components. The proposed models of well-being insist in

multidimensionality at least conceptually, although it is very probable, that a strong general or global factor of well-being pervades all dimensions of SWB and PWB. The past research offers the evidence for a strong general well-being dimension in both hedonic and eudaemonic domain. In the theory of SWB, a global factor of well-being is presupposed (****). Similarly, the correlations between six components of PWB, measured by Ryff's PWBS, are very substantial and yielded often a convincing higher-order solution with one single general factor (Abbott et al., 2006; Hauser & Springer, ****). Therefore, one could expect a great redundancy in the mostly used measures of SWB and PWB dimensions. Theoretically, it is important to know the extent of shared variance of well-being components, for this knowledge could contribute to better understanding of the nature of well-being, especially in concern to different theoretical explanations that are not equivocal at all (Diener & Fujita, 1997; Diener & Lucas, 2000a,b; Diener, Lucas, & Napa Scollon, 2006; Diener, Diener & Diener, 1995; Diener, Sapyta, & Suh, 1998; Oishi, 2000; Oishi & Diener, 2001). The structural composition of well-being could also help to explain more thoroughly the relationships between the mental wellness and other important psychosocial variables. One of the best examples are personality dimensions (Big Five, especially neuroticism and extraversion), which have strong correlations with different well-being measures (Costa & McCrae, 1980; Costa, McCrae & Zonderman, 1987; Diener, 1996; Diener, 1998; Diener & Lucas, 1999a,b; Emmons & Diener, 1985a,b; Lucas & Diener, 2000; Schimmack, Oishi, Diener & Suh, 2000; Watson & Clark, 1992). Methodologically, a clear evidence of the structure of well-being is important in order to reduce the possible redundancy in the plethora of existing scales and sub-scales constituting the measurement apparatus related to the well-being.

Thus, in order to clarify this important theoretical and methodological issue, I planned a multivariate study of the dimensional space of well-being. The study is focused on the variables that define the structure of SWB and PWB model, as well as the variables that tentatively integrate dimensions of both hedonistic and eudaemonic model (Deci & Ryan, 2000; Gagne, 2003). According to my hypothesis, the dimensions of well-being should display a hierarchical structure that integrates the theoretically modeled components of well-being into smaller number of first-order and higher-order dimensions, and, particularly, that a prevailing amount of the variance between components could be explained by only one general factor of well-being (gWB). Thus, the difference between hedonistic and

eudaemonic components of the well-being should appear at lower levels of the well-being hierarchy. Additionally, I hypothesized that higher-order factors of well-being should strongly contribute to the correlations between the well-being and personality dimensions.

Method

Design, participants and procedure

The research was performed as a multivariate study focused on the dimensional space of well-being and its connections with the basic dimensions of personality. The sample included 918 participants, 667 females and 251 males. The mean age of participants was 34.13 (SD=10.89). The participants fulfilled the Slovenian versions of the Positive Affect and Negative Affect Schedule (PANAS), Satisfaction with Life Scale (SWLS), Psychological Well-being Scale (PWBS), Basic Psychological Needs Scale (BPNS) and Big Five Inventory (BFI). The collected data were analyzed using the statistical program PASW Statistics 18.0 (release 18.0.0) and R program language (R Development Core Team (2009).

Measures

Positive Affect Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988). The Slovenian version of PANAS (adopted by translation-retranslation procedure; Avsec, 2000) was used as a measure of two basic dimensions of trait emotionality, positive affect (PA; 10 items) and negative affect (NA; 10 items). Participants used a 5-point scale (1 = very slightly or not at all, 5 = extremely) to indicate the extent of generally feeling the respective mood state. The original PANAS has acceptable reliability, Cronbach Alpha coefficients in different samples range from 0.90 to 0.96 for PA and from 0.84 to 0.87 for NA (Watson et al., 1988). For the current sample (Sample 1), the coefficients are 0.76 (positive affect) and 0.89 (negative affect). Confirmatory factor analyses (CFA) confirmed single-factor structure for both Positive affect Scale (Chi-Square = 29.9; p = 0.12; RMSEA = 0.027), and Negative

affect Scale (Chi-Square = 8.16; p = 0.52; RMSEA = 0.000). The two-factor solution of factor analysis

for the entire PANAS yielded two dimensions that are equivalent to both sub-scales (PA and NA); the

correlations between the factor scores of obtained latent dimensions and respective sub-scales are 0.96

(for PA), and 0.98 (for NA).

Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The Slovenian

version of SWLS (adopted by translation-retranslation procedure; Avsec, 2000) has been used to assess

the cognitive component of subjective well-being. The SWLS consists of 5-items that are rated on a 7-

point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Test-retest correlation coefficient

of 0.82 and coefficient alpha of 0.87 have been reported for the original SWLS (Diener et al., 1985).

Later, the SWLS has been widely used and thoroughly validated (Pavot & Diener, 1993). In the current

sample (Sample 1), the Cronbach Alpha is 0.86. The single-factor structure of SWLS has been

convincingly confirmed by LISREL CFA (Chi-Square = 5.13; p = 0.16; RMSEA = 0.037).

Psychological Well-being Scale (PWBS; Ryff, 1989, 1995; Ryff & Keyes, 1995). The Slovenian

version of the abbreviated PWBS was used in this study. The abbreviated scale consisted of 25 items

where the participants responded on a six-point Likert scale ranging from "very strongly disagree" to

"very strongly agree." Item questions consisted of statements such as "I like most aspects of my

personality" and "The past had it's ups and downs, but in general, I wouldn't want to change it" (Ryff,

1989). The scale encompasses six sub-scales that address the following main categories of

psychological well-being: self-acceptance, positive relations with others, autonomy, environmental

mastery, purpose in life, and personal growth (Ryff, 1989). For different sub-scales, Cronbach Alpha

coefficients ranged from 0.69 to 0.74, except for the Autonomy scale, where the coefficient was 0.60.

Basic Psychological Needs Scale (BPNS; Gagne, 2003). The Basic Psychological Needs Scale

include several scales: the general need satisfaction, and other scales that address need satisfaction in

specific domains. In the project, the scale that includes the work domain and the interpersonal relations domain will be used mosoftent often. This scale had 21 items concerning the three needs: need for competence, autonomy, and relatedness.

Big Five Inventory (BFI; John, 1990; John, Donahue, & Kentle, 1991; John & Srivastava, 1999). The Slovenian version of BFI (adopted by translation-retranslation procedure; Avsec & Sočan, 2006; Musek, 2005) was applied to obtain scores for Big Five dimensions in the first sample. The inventory contains 44 items that are rated on the 5-point scale ranging from *not agree at all* (1) to *absolutely agree* (5). The items are the basis for scoring five BFI scales: Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness. The original version of BFI has shown good reliability and convergent as well as discriminant validity (Benet-Martinez & John, 1998; Costa & McCrae, 1992c; John & Srivastava, 1999; Watson & Hubbard, 1996; Watson, Clark, & Harkness, 1994). In the current sample, Cronbach alpha coefficients range from 0.79 to 0.85. Five-factor solution of 44 items yielded latent dimensions that can be clearly interpreted as Big Five; the correlations between their factor scores and corresponding sub-scales of BFI ranged from to 0.95 to 0.96.

Results and discussion

The results will be displayed in four parts. The first part contains the results of correlational and multivariate analyses of 12 well-being scales originating from the measures of well-being used in the study: satisfaction with life (SWLS), positive affect, negative affect (PANAS), self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, personal growth (PWBS), need for competence, autonomy, and relatedness (BPNS). The second part comprises the results of correlational and multivariate analyses of the 71 items from all four well-being measures. By integration of both kinds of results, we will focus on the construction of comprehensive structural

model of well-being in the third part. In the fourth, the last part, I will examine the relationship between the obtained dimensions of well-being and personality dimensions.

Structural hierarchy of well-being scales

As we can see from Table 1, all 9 well-being scales correlate substantially (correlations range from -0.54 to 0.73 and all are highly significant), suggesting thus the appropriateness of factor analysis even by mere inspection. The factorizability of the respective correlation matrix is highly recommended by formal measures like Kaiser-Meyer-Olkin coefficient of sampling adequacy (0.913) and Bartlett's test of sphericity (3940.831; df = 36; P = 0.000). Consequently, we decided to perform factor analysis (principal axis factoring or PAF) in order to explore the structure of well-being scales. Other factor and component analyses were also conducted, yet for the sake of sparing space I will focus mainly on the results of PAF. In any case, the results of different analyses have been congruent and very similar. For example, in one-factor solutions, the factor congruence between the first factors derived from PAF and PCA (Principal Components Algorithm) is perfect (1.00). In respective two-factor solutions, the congruence between the first factors is 0.99 and the congruence between the second extracted factors is 0.97. In both cases, the factor congruence has been computed using the factor.congruence algorithm from "psych" package in R program language (Revelle, 2009).

Insert Table 1 about here

Concerning the number of factors being extracted, all criteria equivocally suggested only one factor: scree test, parallel analysis test, PA-MBS test, optimal coordinates, acceleration factor and even Kaiser criterion (Figure 1). The first extracted components or factors strongly surpassed the following ones. Thus, the first principal component has initial Eigenvalue 4.769, which explained 52.99 percent

of the total variance in the correlation matrix exceeding thus far the second component (Eigenvalue

0.925; 10.28 percent of variance). Other indices also emphasize the dominant position of the first

factor. Both Cronbach Alpha and McDonald (1999) Hierarchical Omega coefficients have high values

(0.88 and 0.76 respectively) suggesting that the underlying variables are well-saturated on a general

factor. Revelle's (Revelle, 2009) factor fit indices yielded a neglecting increment in reproduction of the

original correlation matrix if the second factor is added to the first (0.91 as compared with 0.89). All

this is also in good concordance with the results of Schmid Leiman transformation (Schmid & Leiman,

1957), being displayed in Table 2. For all variables, the loadings on the general factor are convincingly

stronger than the loadings on 3 residualized group factors with only two exceptions, namely the loading

of Growth scale on factor 2 and the loading of Negative Affect scale on factor 3. The first factor loaded

substantially all well-being scales and could be therefore interpreted as a general factor of well-being

(gWB).

Insert Figure 1 about here

Insert Table 2 about here

Nevertheless, following the theoretical expectation that the next factors could reveal the

difference between hedonistic and eudaemonic dimensions of well-being, we decided for three

solutions in factor extraction procedure: one-factor, two-factor and three-factor solution (the

Eigenvalues of further factors were too far below 1.00 to be of considerable worth). First, one-factor

solution should render the general dimension of well-being and the respective loadings of well-being

scales and the other two solutions would probably reveal any remaining meaningful higher-order

dimensions of well-being. Oblique rotation method was chosen for two- and three-factor solution

because it would be unrealistic to expect the orthogonality of higher-order dimensions of well-being

scales. Thus, both pattern and structure matrix should be considered in the interpretation of factors and

their connections to the underlying scales. The loadings of well-being scales for all three factor

solutions are shown in the Table 3. All three extracted factors explain 72.30 of the total variance in the

correlation matrix. The loadings of the only factor extracted in one-factor solution resemble quite well

the loading pattern of the general factor, obtained by Schmid Leiman transformation (Table 2). Thus, it

represents the gWB, a most general dimension of well-being, substantially associated with all well-

being scales. In two-factor solution, the first factor is still resembling the gWB with the clear exception

of loadings of GROWTH and (to less extent) PA scales, which are in turn associated to the second

factor. Thus, the first factor may be interpreted as a broad factor of satisfaction and might represent a

core dimension of hedonistic well-being. The second factor may be labeled the broad factor of growth

(bfGROWTH) and could represent more eudaemonic than hedonistic features of well-being. Both

factors are essentially preserved in the three-factor solution, while the third factor relates very

significantly with negative emotionality. Note that the essence of the second and third dimension in

two- and three-factor solution could be detected in Schmid Leiman transformation data already, namely

in the outstanding loadings of the GROWTH and NA scales for the respective dimensions (second and

third).

Insert Table 3 about here

All extracted factors are strongly correlated. In two-factor solution, the correlation between both extracted factors is 0.697, and in three-factor solution the correlations are 0.713 (between first and second factor), 0.735 (first and third factor) and 0.607 (second and third factor). Thus, the redundancy of extracted dimensions as well as of underlying scales is rather great. Strong interrelatedness between well-being dimensions is well discernible not only in the residualizing effects of gWB (Table 2) but also in mere inspection of structure matrices for two-factor and three-factor solutions given in the respective columns in Table 3. General factor definitely overshadows the remaining dimensions of well-being as the structure of well-being scales concerns.

Confirmatory factor analyses rather corroborate the results of exploratory analyses. Different models have been tested by CFA algorithm including one-factor, two-factor and three-factor solutions and additionally the hierarchical and bifactor model solutions in two-factor and three-factor models (see Figure 2). Table 4 displays the resulting fit indices for all seven unmodified models. As expected, the values of chi square were significant provided rather great number of participants in the sample, thus we should concentrate on the fit measures that are less dependent on sample size. Except RMSEA, the resulting indices show quite acceptable values for all tested models. Chi square values significantly decreased from one-factor to three-factor solution, yet at the expense of model parsimony. The fit indices for two-factor and three-factor models are identical with indices with the respective hierarchical models, what is not surprising due to the strong correlations between extracted factor. The best yet again less parsimonious solutions yielded the bifactor models. In sum, the most parsimonious one-factor solution proved to be acceptable and the introduction of other models brought not a drastic improvement of fit indices except of the chi square. The importance of gWB is thus confirmed although the existence of further dimensions of well-being must be considered seriously in the search for the stable structure of psychological wellness.

Insert Figure 2 about here

Insert Table 3 about here

Dimensional structure of well-being items

More differentiated insight into the structure of well-being can be expected from the analysis of scale items. Therefore, the entire set of 50 items (including the items of SWLS, PANAS and the short form of PWBS) was factor analyzed using both PAF and PCA algorithms. The factorizability of the item matrix is very high (Kaiser-Meyer-Olkin coefficient of sampling adequacy was 0.941), both PAF and PCA results were very similar again (correlations between respective extracted factors range from 0.98 to 1.00), thus the results of PAF will be further reported. Although 10 factors reached the value 1.00 of Eigenvalues, the other appropriate criteria suggest the extraction of 7 factors (parallel analysis and optimal coordinates test), 3 factors (scree test) or only one factor (acceleration factor test) (see Figure 3). As in the case of scale factorization, the first factor fairly exceeded the next accounting for the 26.18 percent of the variance. Therefore, we decided for one-factor, three-factor and seven-factor solution, according to the extraction criteria indices. Additionally, we performed also the two-factor solution in order to compare the results of item and scale data and possibly obtain two superordinate dimensions concerning two domains of well-being (hedonistic and eudaemonic).

Insert Figure 3 about here

The rather large table containing the PAF loadings of well-being items on the respective dimensions of one-factor, two-factor, three-factor and five-factor solution is presented in the Appendix. Table 4 displays the correlations of extracted factors with the well-being scales and factors derived from scale analyses that will alleviate the interpretation of obtained latent dimensions. Note that for easier interpretation the signs (plus or minus) of respective factors could be reversed. The general factors in both one-factor solutions (item and scale gWBs) are practically identical ($r = 0.981$). In two-factor item solution, the first factor is very close to the general factor, with a pronounced positive emotionality, while the second factor clearly represents the negative emotionality. Consequently, the extracted factors can be labeled as broad factor of positive emotionality and broad factor of negative emotionality, respectively. This is somewhat different from the situation of two-factor solution of scale data, where the broad dimension of growth emerged as the second factor. Nevertheless, a very high congruence is reestablished between dimensions in both three-factor solution provided the reverse keying of third item factor. The first factor in this solution is a general satisfaction dimension of well-being, highly connected with SWLS scores and broad satisfaction dimensions in two-factor scale solution.

Insert Table 4 about here

Conclusions

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Table 1.

The correlations between 9 scales of well-being.

	1	2	3	4	5	6	7	8	9
1. Satisfaction with life	1.00	0.38	-0.34	0.46	0.26	0.64	0.27	0.56	0.65
2. Positive affect	0.38	1.00	-0.31	0.41	0.42	0.54	0.43	0.54	0.51
3. Negative affect	-0.34	-0.31	1.00	-0.44	-0.39	-0.54	-0.18	-0.42	-0.46
4. Positive relatedness	0.46	0.41	-0.44	1.00	0.33	0.55	0.33	0.53	0.58
5. Autonomy	0.26	0.42	-0.39	0.33	1.00	0.46	0.36	0.42	0.42
6. Mastery	0.64	0.54	-0.54	0.55	0.46	1.00	0.38	0.69	0.73
7. Personal growth	0.27	0.43	-0.18	0.33	0.36	0.38	1.00	0.44	0.46
8. Life purpose	0.56	0.54	-0.42	0.53	0.42	0.69	0.44	1.00	0.73
9. Self-acceptance	0.65	0.51	-0.46	0.58	0.42	0.73	0.46	0.73	1.00

Note. Scale scores were calculated from SWLS (Satisfaction with life), PANAS (Positive affect, Negative affect) and PWBS (Positive relatedness, Autonomy, Mastery, Personal growth, Life purpose, Self-acceptance).

Table 2.
Schmid Leiman transformation for 9 scales of well-being.

	g	F1	F2	F3	h2	u2
Satisfaction with life	0.68	0.38	0.11	0.03	0.62	0.38
Positive affect	0.57	0.08	0.39	0.02	0.48	0.52
Negative affect (-)*	0.53	0.01	0.02	0.76	0.86	0.14
Positive relatedness	0.60	0.18	0.11	0.16	0.43	0.57
Autonomy	0.46	0.01	0.36	0.19	0.38	0.62
Mastery	0.79	0.27	0.11	0.16	0.73	0.27
Personal growth	0.45	0.03	0.45	0.07	0.41	0.59
Life purpose	0.75	0.24	0.23	0.03	0.68	0.32
Self-acceptance	0.81	0.30	0.13	0.04	0.77	0.23

* Negative affect was reversely coded to obtain a positive manifold in the initial correlation matrix.

Note. g – saturations of well-being dimensions with the general factor; F1 to F3 – saturations with three residualized primary factors; h2 – communalities; u2 – uniquenesses

Table 3.

Loadings of respective factors on 9 well-being scales for one-, two-, and three-factor solutions.

	1-factor	2-factor				3-factor					
		Pattern		Structure		Pattern			Structure		
Satisfaction with life	.673	.881	-.198	.729	.478	.978	-.203	-.083	.768	.483	.453
Positive affect	.637	.104	.615	.576	.694	.110	.598	.007	.566	.686	.450
Negative affect	-.557	-.528	-.044	-.562	-.450	-.022	.116	-.864	-.518	-.432	-.807
Positive relatedness	.662	.568	.118	.658	.554	.411	.120	.198	.636	.552	.550
Autonomy	.535	.065	.538	.478	.588	-.187	.550	.303	.432	.595	.514
Mastery	.860	.810	.077	.870	.700	.613	.101	.224	.841	.701	.701
Personal growth	.505	-.115	.713	.432	.624	-.019	.766	-.177	.439	.643	.281
Life purpose	.818	.558	.302	.790	.731	.548	.330	-.008	.791	.738	.565
Self-acceptance	.868	.767	.132	.868	.721	.753	.168	-.006	.875	.731	.606
Eigenvalues*	4.769	4.769	.925			4.769	.925	.813			
% of variance	52.987	52.987	10.277			52.987	10.277	9.034			

* Initial

Table 2.

Promax rotated factor loadings of 12 scales of well-being: two-factor and one-factor solution.

	5-factor solution					2-factor solution		1-factor solution
	factors					factors		factors
	1	2	3	4	5	1	2	1
satisfaction with life	.85	.49	.31	.33	.16	.75	.59	.74
positive affect	.56	.42	.43	.88	.31	.56	.71	.69
negative affect	-.67	-.64	-.76	.00	.00	-.65	-.57	-.67
positive relatedness	.58	.88	.44	.25	.26	.79	.44	.69
autonomy	.38	.24	.86	.39	.26	.26	.74	.53
mastery	.89	.61	.64	.47	.15	.81	.78	.87
personal growth	.50	.39	.44	.39	.85	.46	.70	.63
life purpose	.83	.51	.59	.50	.34	.72	.81	.83
self-acceptance	.90	.55	.55	.44	.36	.79	.80	.86
SDT autonomy	.83	.67	.69	.54	.05	.81	.76	.86
SDT competence	.76	.58	.63	.64	-.08	.73	.71	.79
SDT relatedness	.53	.90	.35	.37	.03	.80	.34	.64
Eigenvalues	6.95	1.04	0.83	0.78	0.64			
(after rotations)	(6.05)	(4.33)	(4.06)	(2.74)	(1.26)			
% of explained variance	54.95	8.68	6.95	6.50	5.30			

Table 3.

The factors of well-being extracted on the basis of item factor analyses.

Factor names (Eigenvalues; % of explained variance)	Description of factor	Items with highest loadings
5-factor solution		
Fi1LifeSatisfaction (19.79; 27.87) (15.22 Eigenvalue after rotation)	Feelings of general satisfaction with life	I am satisfied with my life. In most ways my life is close to my ideal. When I look at the story of my life, I am pleased with how things have turned out. In many ways, I feel disappointed about my achievements in life. (-) The conditions of my life are excellent. I find it satisfying to think about what I have accomplished in life.
Fi1NegativeAffect (3.59; 5.06) (14.53)	Negative affect	Afraid Jittery Scared Nervous I often do not feel very capable.
Fi1PositiveAffect (3.07; 4.33) (11.11)	Positive affect	Strong Determined Proud Inspired Interested
Fi1Relatedness (2.74; 3.86) (10.52)	Feelings of relatedness	I really like the people I interact with. The people I interact with regularly do not seem to like me much. (-) I pretty much keep to myself and don't have a lot of social contacts. (-) I consider the people I regularly interact with to be my friends. There are not many people that I am close to. (-)

Fi1Growth (2.34; 3.30) 9.78)	Feelings of personal growth	I have a sense that I have developed a lot as a person over time.
		I enjoy seeing how my views have changed and matured over the years.
		For me, life has been a continuous process of learning, changing, and growth.
		In general, I feel that I continue to learn more about myself as time goes by.
		I think it is important to have new experiences that challenge how you think about yourself and the world.
2-factor solution		
Fi2NegativeEmotionality	Negative emotionality including feelings of dissatisfaction with life (lower hedonistic than eudaimonic well-being)	I have difficulty arranging my life in a way that is satisfying to me.
		In many ways, I feel disappointed about my achievements in life.
		Jittery
		Afraid
		I feel pressured in my life.
		I am quite good at managing the many responsibilities of my daily life. (-)
		I have a sense that I have developed a lot as a person over time. (-)
		I find it satisfying to think about what I have accomplished in life. (-)
Fi2PositiveEmotionality	Positive emotionality including feelings of self-acceptance, meaning, mastery and growth (higher eudaimonic than hedonistic well-being)	I feel like I am free to decide for myself how to live my life.
		I am quite good at managing the many responsibilities of my daily life.
		I have a sense that I have developed a lot as a person over time.
		I find it satisfying to think about what I have accomplished in life.
		When I look at the story of my life, I am pleased with how things have turned out.
		Determined
		Strong
		I like most aspects of my personality.
1-factor solution		
Fi3GeneralWellness	General factor of well-being (high hedonistic and eudaimonic well-being, low negative and high positive emotionality)	In many ways, I feel disappointed about my achievements in life. (-)
		I have difficulty arranging my life in a way that is satisfying to me. (-)
		I feel like I am free to decide for myself how to live my life.
		I am satisfied with my life.
		I often do not feel very capable. (-)
		In the final analysis, I'm not so sure that my life adds up to much. (-)
		I find it satisfying to think about what I have accomplished in life.
		When I look at the story of my life, I am pleased with how things have turned out.
		Afraid (-)
		In general, I feel I am in charge of the situation in which I live.

Note. Factors were extracted from the 72 items of all four measures of well-being: SWLS, PANAS, PWBS, and BPNS.

Table 4.

Correlations between factors derived on the basis of interscale and interitem correlations.

Correlations

	Fs1Sat	Fs1Rel	Fs1LNA	Fs1PA	Fs1Gro	Fs2HWB	Fs2EWB	Fs3gW
Fi1LifeSatisfaction	.95(**)	.58(**)	.45(**)	.42(**)	.21(**)	.85(**)	.72(**)	.87(**)
Fi1NegativeAffect	-.78(**)	-.63(**)	-.88(**)	-.28(**)	.03	-.72(**)	-.76(**)	-.80(**)
Fi1PositiveAffect	.56(**)	.39(**)	.48(**)	.95(**)	.20(**)	.54(**)	.74(**)	.69(**)
Fi1Relatedness	.56(**)	.96(**)	.36(**)	.30(**)	.11	.84(**)	.35(**)	.67(**)
Fi1Growth	.50(**)	.37(**)	.60(**)	.40(**)	.74(**)	.44(**)	.76(**)	.64(**)
Fi2NegativeEmotionality	-.90(**)	-.82(**)	-.78(**)	-.30(**)	-.04	-.91(**)	-.74(**)	-.91(**)
Fi2PositiveEmotionality	.82(**)	.57(**)	.59(**)	.79(**)	.46(**)	.77(**)	.90(**)	.91(**)
Fi3GeneralWellness	.95(**)	.77(**)	.75(**)	.58(**)	.27(**)	.92(**)	.89(**)	1.00(**)

Note. Factors extracted on the basis of interitem correlation are signed with Fi initials and factors extracted on the basis of interscale correlations are signed with Fs initials. The full descriptos for interscale factors are: Fs1Satisfaction (abbreviated as Fs1Sat), Fs1Relatedness (Fs1Rel), Fs1LowNegativeAffect (Fs1LNA), Fs1PositiveAffect (Fs1PA), Fs1Growth (Fs1Gro), Fs2HedonicWellbeing (Fs2HWB), Fs2EudaimonicWellbeing (Fs2EWB) and Fs3GeneralWellness (Fs3gW).

** Correlation is significant at the 0.01 level (2-tailed).

Parallel Analysis Scree Plots