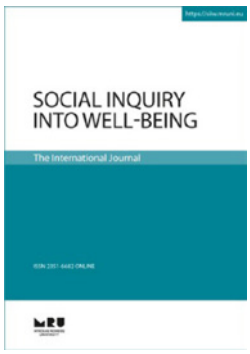
MYKOLAS ROMERIS UNIVERSITY

http://siiw.mruni.eu
2015, Vol. 1, No. 2

DOI:10.13165/SIIW-15-1-2-07

Social Inquiry into Well-Being



E-ISSN 2351-6682

Flourishing Scale: Evidence of Its Suitability to the Brazilian Context

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Abstract

The present study aimed to support the psychometric adequacy of the Flourishing Scale in the Brazilian context. It counted with a non-probabilistic sample of 171 undergraduate students (Study 1) and 177 individuals from the general population (Study 2). Participants answered to the Flourishing Scale, the Positivity Scale, and demographic questions. The studies showed a one-factor solution, with satisfactory internal consistency, providing empirical evidence of convergent validity through the average variance extracted and showing positive correlation with the construct of positivity. Furthermore, a confirmatory factor analysis (ML) corroborated the recommended one-factor model. This measure demonstrated to be psychometrically suitable for use in the Brazilian context. Thus, this study provided a brief and low-cost measure of well-being from the perspective of flourishing, being adequate to be used in the research field.

Keywords: Flourishing, Well-being, Positive Psychology, Measure, Validity.

Introduction

Psychology has historically mainly focused in pathological and negative aspects of human nature (Paludo & Koller, 2007). This tradition inhibited the understanding of successful human functioning (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000). However, in recent decades, especially with the growing number of studies addressing the theme of positive psychology, there has been a concern about healthy aspects of psychological functioning. Such studies have paid attention to factors that contribute to people's and community's life quality, focusing on the human potential and factors that contribute to its development (Paludo & Koller, 2007; Seligman, Steen, Park, & Peterson, 2005). In this context, researchers have focused mainly in the study of well-being, its assessment, and estimation of its correlates (Caprara et al, 2012;. Diener, 2000; Diener, Scollon, & Lucas, 2009; Diener & Chan, 2011; Diener, Suh, Lucas, & Smith, 1999; Diener & Tov, 2012).

In the common sense, well-being is usually simply called "happiness", "happy" or "life satisfaction" (Diener, Oishi, & Lucas, 2003). In general, researchers have emphasized that this construct refers to the ideal experience and psychological functioning, but it varies depending on the adopted perspective (Deci & Ryan, 2008). Correspondingly, among the main models that seek to assess well-being, the most prominent are the hedonic and eudaimonic models (Woyciekoski, Stenert, & Hutz, 2012).

*The second and fourth authors are funded by Capes Foundation – Ministry of Education of Brazil.

The hedonic perspective suggests that well-being is the happiness related with experience of pleasure and displeasure (Giacomoni, 2004), highlighting the subjective aspect or personal evaluation that people make of their lives (Diener & Chan, 2011; Diener et al, 2010; Diener et al, 1999). In this case, well-being is defined by high levels of positive affect and life satisfaction, and low levels of negative affect (Deci & Ryan, 2008). On the other hand, the eudaimonic perspective suggests that well-being goes beyond mere happiness; the fact that someone says they are satisfied with their lives and living positive experiences does not indicate they are psychologically well (Deci & Ryan, 2008). This approach focuses on the psychological well-being (PWB), understanding happiness as essential to the overall well-being, but not as a single indicator, emphasizing feelings of personal expression and self-fulfillment (Albuquerque & Trocólli., 2004; Diener et al, 1999; Ryff, 1989). Therefore, it does not only consider the present state of people's subjective well-being, but also covers their personal growth, development potential and their purposes (Diener & Chan, 2011). In short, the eudaimonic perspective differs from the hedonic regarding their views of happiness; this second tradition assumes well-being is linked to pleasure (positive feelings), while the eudaimonic perspective emphasizes the role of effort directed to excellence and a good life (Keyes & Simoes, 2012).

Different instruments based on these two perspectives have been developed to assess how people perceive and evaluate their lives (Diener et al., 2003). Most instruments are self-report scales, which are particularly appropriate to assess this construct, considering that only the individual can evaluate her or his personal life satisfaction (Albuquerque & Trócolli, 2004).

Regarding the eudaimonic perspective, Ryff and Keyes (1995) developed the *Scales of Psychological Well-Being* composed of 18 items assessing six dimensions, namely: *autonomy*, *positive relations with others*, *personal growth*, *meaning of life*, *mastery* and *self-acceptance*. More recently, following this same perspective, the *Questionnaire for Eudaimonic Well-Being* (QEWB, Waterman et al., 2010) was proposed. This measure includes aspects of subjective well-being assessed by 21 items, as indicated: self-discovery, perceived potential, sense of purpose and meaning, intense involvement in activities, effort and enjoying personally expressive activities.

Commonly, the measures in this field are based on the hedonic perspective of subjective well-being (SWB), covering its three dimensions (life satisfaction, positive and negative affects). For instance, Diener, Emmons, Larsen and Griffin (1985) developed the *Satisfaction with Life Scale* (SWLS), covering the cognitive aspect of well-being, with five items. In turn, Watson, Clark and Tellegen (1988) developed the *Positive and Negative Affect Schedule* (PANAS) to measure the affective aspect, consisting of 20 items. A more complete scale was proposed by Lawrence and Liang (1988), aiming to assess the affective and cognitive aspects of well-being, named as *Subjective Well-Being Scale* (SWB), and consisting of 15 items. In this same perspective, Albuquerque and Trócolli (2004) proposed the *Subjective Well-Being Scal*e (*Escala de Bem-estar Subjetivo*, EBES), assessing the three components of SWB (life satisfaction, positive and negative affects), with 69 items. Although they are more common, Lyubomirsky and Lepper (1999) criticize the measures drawn up by this perspective, these authors comment that such measures only provide an overall assessment of a specific period of time. In this direction, they suggest a measure of "overall subjective happiness", able to assess to what extent a person is happy or not, referred as *Subjective Happiness Scale*, formed by four items.

Notwithstanding, it has been postulated that well-being is a multidimensional construct and, therefore, combines both subjective and psychological aspects of well-being (Silva & Caetano, 2011; Sumi, 2013). Some researchers (e.g., Keyes, 2002; Keyes & Haidt, 2003) have tried to use an integrated approach of the hedonic and eudaimonic perspectives. Specifically, Keyes (2002) conducted a study combining subjective well-being and psychological well-being measures from the previous outlook, introducing the concept of *flourishing* as an indicator of well-being. This term was then incorporated into positive psychology, being defined as a condition that allows the full, healthy and positive development of psychological, biological, and social aspects, representing a positive emotion for life. Hence, those individuals that reach flourishing live intensely, exceeding the mere existence (Keyes & Haidt, 2003; Paludo & Koller, 2007).

Flourishing and subjective well-being are closely related constructs. More specifically, the first is a measure of the latter (Huppert & So, 2013). Thus, flourishing refers to a more global view of well-being, covering not only satisfaction with life, but also self-acceptance, personal growth and a sense of purpose (Keyes, 2003). According to Diener et al. (2009, 2010), human flourishing comprehends issues such as competence, self-esteem, optimism, and contributions to the well-being of others. Based on this concept and in order to integrate the perspectives of previous evaluations of well-being, Diener et al. (2009, 2010) proposed the *Flourishing Scale*. Its purpose was to provide a brief measure of well-being and, at the same time, to offer a more complete assessment of this construct. More information about this scale is provided below.

Flourishing Scale

As previously mentioned, there is a significant number of instruments designed to assess well-being either from hedonic or eudaimonic perspective. In order to provide an integrative evaluation, Diener et al. (2010) developed a new instrument combining recent theories about well-being. Specifically, the authors used psychological theories of human flourishing derived from humanistic approaches (Ryan & Deci, 2000; Ryff, 1989; Ryff & Singer, 1998) in association with the concept of "social capital", which has been associated with well-being (Helliwell et al., 2009; Putnam, 2000), as well as concepts such as optimism, purpose and meaning of life (Ryff & Singer, 1998; Seligman, 2002). These concepts are assessed by eight items in the Flourishing Scale.

For elaboration, development and validation of the Flourishing Scale, the authors counted with a sample of 689 students from the United States and Singapore. They found the one factor structure, explaining 53% of the total variance, and adequate coefficients of internal consistency (Cronbach's alpha, $\alpha = .87$) and test-retest reliability of .71 (Pearson's r) (Diener et al., 2010).

Therefore, the Flourishing Scale is a brief instrument to cover essential aspects of SWB, and encouraged further studies investigating its appropriateness in other cultures. For example, Sumi (2013) adapted it to the Japanese context, confirming its factor structure, which showed similar internal consistency from the original study (α = .88). Silva and Caetano (2013) adapted it to the Portuguese context, also confirming its factor structure, with satisfactory internal consistency coefficient (α = .81). Finally, in New Zealand, the scale factor structure was also supported, and its internal consistency was even more promising than in previous studies (α = .91) (Hone, Jarden, & Schofield, 2013).

The Flourishing Scale has some advantages comparing to previous measures of subjective well-being. Firstly, this measure is drawn from an integrative perspective, it is brief, ensuring the economy of time in its application, especially in contexts where the researcher has several measures and not much time available (Sumi, 2013). Moreover, it has been showed to be psychometrically adequate in several countries (Diener et al, 2010; Hone et al, 2013). In this sense, although there are other measures of subjective well-being in the Brazilian context (Albuquerque & Trócolli, 2004), they are mostly based on the hedonic approach, which evaluates the well-being narrowly during a specific period of time (Lyubomirsky & Lepper, 1999). Furthermore, the existence of a Portuguese version of the Flourishing does not exclude the need for a Brazilian adaptation. There are significant language specificities and cultural differences between Portugal and Brazil (Duarte, 2008), requiring a specific adaptation to Brazilian context (Silva & Caetano, 2013). Thus, motivated by these aspects, the aim of this study is to adapt the Flourishing Scale to the Brazilian context, gathering evidence of its factorial validity and internal consistency.

Finally, although Diener et al. (2009) also presented a measure of positive and negative experiences, its validation was not considered for the present study because similar instruments have already been developed or validated for the Brazilian context (e.g., Albuquerque & Trócolli, 2004; Zanon, Bastianello, Pacico, & Hutz, 2013).

Study 1. Flourishing Scale Adaptation

This study aimed to adapt the Flourishing Scale (Diener et al., 2010) to the Brazilian context, gathering evidences of factor validity and reliability, using Exploratory Factor Analysis.

Method

Participants

Participants were 177 undergraduates from a public university of João Pessoa (PB), who took part in the study voluntarily. Their ages ranged between 18 and 53 years (M = 23.6, SD = 7.9), mostly were women (65.5%) and single (84.2%). Therefore, it was a non-probabilistic and convenience sample.

Materials

The Flourishing Scale (Diener et al., 2010) was used in this study. This instrument is composed of eight items (e.g., 1. I lead a purposeful and meaningful life; 6. I am a good person and live a good life) assessing psychological well-being. Participants indicated their agreement with each item using a scale varying from 1 (Strongly disagree) to 7 (Strongly agree). Furthermore, participants answered demographic questions such as marital status, gender and age.

All the items, instructions and response scale were translated from English to Portuguese by a bilingual researcher, and then back-translated (Portuguese to English) by a second bilingual researcher. After this procedure, both English versions were compared by a third bilingual collaborator. No substantial changes were necessary to the Portuguese version, which we made an effort to maintain the original meaning of each item. Previous to the application of the instrument, a semantic validation was conducted with secondary school students to verify whether the instructions and the items were clear and understandable.

Procedure

The students were invited to participate voluntarily at the beginning of their lecture. They answered the questionnaire individually, but in the collective environment of the lecture room. Before starting the questionnaire, we asked participants to read and sign a consent form, allowing the use of their data for academic and scientific purposes. All the ethical principles of research involving human beings were respected, according with the resolution 466/12 of the Brazilian National Health Council (CNS, in Portuguese), ensuring to the participants the anonymity of their answers. Participants took on average five minutes to conclude their participation in this study.

Data Analysis

R program (R Development Core Team, 2011; Raiche, Walls, Magis, Riopel, & Blais, 2013; van der Ark, 2012) was used to analyze the data. First we checked the adequacy of using Principal Component Analysis (PCA) using the Kaiser-Meyer-Olkin (KMO) criterion (psych package; Revelle, 2013), and the Bartlett Sphericity Test (χ^2) (corpcor package; Schäfer et al., 2013). Recommended KMO values should be equal or above .60, and Bartlett chi-square test should be statistically significant to support this type of statistical analysis (Tabachnick & Fidell, 2013). In the present case, the PCA intended to check whether a general factor would emerge, in order to be consistent with the study developed by Diener et al. (2010). Components extraction was determined by a combination of different criteria: Cattell (distributions of the eigenvalues) and Horn (parallel analysis; psych package), Optimal Coordinates, and Acceleration Factor, (nFactors package; Raiche & Magis, 2013). These last two are nongraphical alternatives, which aim to overcome limitations of subjectivity inherent to the Cattell criterion. The Optimal Coordinates seek to ascertain the localization of the factor through simulations, verifying whether the eigenvalues found in the simulations are greater than the actual eigenvalues, defining the number of values to extract. The Acceleration Factor, on the other hand, aims to ascertain the point at which the gradient of the curve has an abrupt and meaningful change, thus identifying the number of factors found prior to this

change, commonly referred as "elbow" (Raiche et al., 2013; Souza, Araújo, Gouveia, Coelho, & Gouveia, 2014).

The unidimensionality of this measure was evaluated using the *Mokken* statistical package (van der Ark, 2012), based on the IRT (Item Response Theory), which tests the assumption of monotonic homogeneity and double monotonicity (Mokken & Lewis, 1982). The Loevinger H (H for total scale and H for each item) and Mokken Rho indexes must be higher than .30 and .80, respectively, in order to support the unidimensionality. Finally, internal consistency was estimated using Cronbach's alpha.

Results

Initially, the adequacy of undertaking a factorial analysis was verified, being observed results which supported its use [*KMO* = .82 and Bartlett's Test of Sphericity, χ^2 (28) = 444.51, $p < .001$]. Subsequently, it was decided to perform a Principal Component Analysis. Cattell and Horn criteria were taken into account, as well as the Optimal Coordinates and Acceleration Factor criteria. Based on these three criteria, it seemed consensual a single component solution. Thus, it was decided to assume the one-factor structure proposed by Diener et al. (2010), being results summarized in Table 1.

Table 1
Factor structure of the Flourishing Scale

Items	Description of content	Component	
		Study 1† (N = 171)	Study 2† (N = 177)
07	I am optimistic about my future.	.77*	.72*
03	I am engaged and interested in my daily activities	.71*	.63*
02	My social relationships are supportive and rewarding	.69*	.73*
08	People respect me	.68*	.67*
01	I lead a purposeful and meaningful life	.67*	.69*
06	I am a good person and live a good life	.65*	.73*
04	I am optimistic about my future	.62*	.72*
05	I am competent and capable in the activities that are important to me	.59*	.57*
	Number of Items	8	8
	Eigenvalue	3.63	3.75
	% Total variance explained	45	47
	Cronbach's alpha	.83	.83
	McDonald's Omega	.84	.83

Notes. *Factor loading commonly accepted for interpretation of the factor ($\lambda \geq |.40|$).
†Principal Component Analysis.

According to this table, the items presented factorial loading above |.50|, resulting in an eigenvalue of 3.63, which was responsible for explaining 45% of the total variance. The one factor dimension of this measure appears to be adequate, as it can be seen by the indicators of the Mokken scalability analysis, which presented satisfactory results [*H* = .40 and *Rho* = .83; Hs varying from .35 (Item 5) to .46 (Item 6)]. Finally, its coefficient of internal consistency was also adequate (α = .83; ω = .84).

Additionally, we tested factorial and reliability invariances using the samples of *Study 1* and *Study 2*. In the first case, the factorial loadings produced by exploratory factor analyses (Principal Component method) was compared, requesting the extraction of a single factor with eight items; the following equation was used: $r_{congruence} = (\Sigma ab) / [(\Sigma a^2).(\Sigma b^2)]^{½}$, in which a coefficient of .996 was observed. In this context, the factorial structures can be considered equivalent. Regarding the coefficients of internal consistency (α), their invariance were also found across both groups ($M < 1$, $p > .05$) (Kim & Feldt, 2008).

Study 2. Replicating the structure of the Flourishing Scale

This study aimed at replicating the factorial structure of the Flourishing Scale obtained in *Study 1*. We used a different sample and Confirmatory Factor Analysis to provide further evidence of psychometric adequacy of the measure.

Method

Participants

Participants were 171 people from the general population, whose ages ranged from 16 to 52 years old (*M* = 21.9, *SD* = 6.5), most of them were female (69.9%), single (84.6%) and heterossexual (96.4%).

Materials

Participants answered an online survey containing the Flourishing Scale (described in *Study 1*) and the Positivity Scale, which was proposed by Caprara et al. (2012), and adapted to the Brazilian context by Souza et al. (2014). This instrument is composed by eight items, and has shown satisfactory reliability coefficients, both in the original study (α = 0.79), and in the Brazilian adaptation (α = .85). Demographic questions were also included (e.g., marital status, gender, age and sexual orientation).

Procedure

The data collection was made through an online questionnaire. The survey link was advertised on a social network, and the authors asked their contacts to answer and to help distributing the link. All the ethical principles were respected following the resolution 466/12 of the Brazilian National Health Council. It was informed to the participants that the study was anonymous and voluntary. Furthermore, it was highlighted the possibility of withdrawing at any time. On average, eight minutes were needed to conclude the questionnaire.

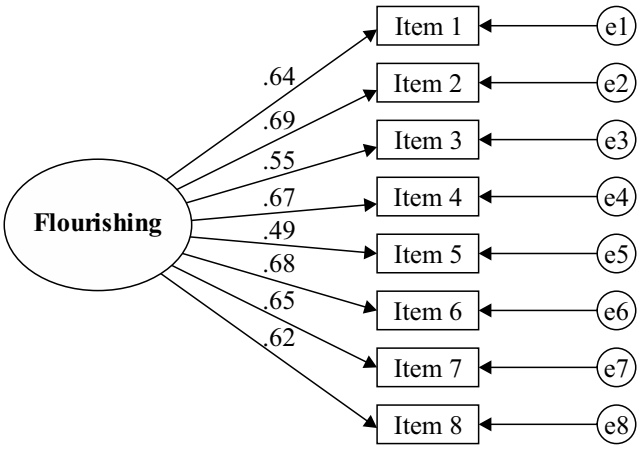
Data Analysis

A confirmatory factor analysis was carried out using AMOS program (version 18). We considered the covariance matrix, adopting the Maximum Likelihood (ML) method. In general, reporting multiple fit indices to estimate the good-fitting models is necessary, evaluating the consistency among different indices (Tabachnick & Fidell, 2013). Thus, we used the following indexes to evaluate fit (Byrne, 2013; Hair, Black, Babin, Anderson, & Tatham, 2009; Tabachnick & Fidell, 2013): χ^2 (chi-square), (χ^2/df); an adjusted model shows a value between 2 and 3, although values up to 5 can be accepted as evidence of adequacy; GFI and AGFI, values near .90 are recommended; CFI, values close to or higher than .90 suggest an adequate fit; TLI, values close to 1.00 are satisfactory, but those between .80 and .90 are also acceptable (Meade, Johnson, & Braddy, 2006); SRMR, values less than .5 are considered satisfactory, however, values close to .08 may also be acceptable (Hooper, Couglan, & Mullen, 2008); the RMSEA is one of the most informative and parsimonious fit indexes, because it suggests that the more adequate the theoretical model, the smaller the proportion of data deviations. Values between .05 and .08 are recommended, accepting those up to .10.

Results

The confirmatory factor analysis sought to test the structure previously found (*Study 1*), grouping the eight items of the Flourishing Scale in a single factor. The main results of this model are shown in Figure 1.

Figure 1.
Factor structure of the flourishing scale.



The following indexes of fit were obtained by the ML estimator: χ^2/*g.l.* = 2.66, *GFI* = .93, *AGFI* = .88, *CFI* = .92, *TLI* = .89, SRMR = .05, and *RMSEA* = .09 (IC90% = .066–.129), being the AGFI and TLI below the recommended values. It is noteworthy that all the factorial weights (lambdas) were greater than |.40| with a mean of .62, having been statistically different from zero ($\lambda \neq 0$; $z > 1.96$, $p < .05$). The single factor showed adequate coefficient of internal consistency (α = .73, ω = .84), similar to that observed in Study 1. Finally, the scores of the *Flourishing Scale* were directly and significantly correlated with those of the *Positivity Scale* ($r = .65$, $p < .001$), suggesting evidence of its convergent validity.

Discussion

The results of the present study were consistent with those observed in other studies assessing the psychometric properties of the Flourishing Scale (Diener et al, 2010; Hone et al, 2013; Silva & Caetano, 2013; Sumi, 2013). Therefore, it provides further evidence of the scale construct validity (e.g. factor structure, convergent validity and internal consistency) in a Brazilian sample, supporting the use of this measure in future studies.

General Findings

We sought to test the structure of the Flourishing Scale by performing two studies, one with exploratory focus and other with confirmatory focus. In the first study, it was observed that the findings were consistent with those presented by Diener et al. (2010), when all the eight items were distributed into an one-dimensional structure, with satisfactory factorial loadings (.50; Hair et al., 2009). It was also decided to verify the reliability of this scale through Cronbach's alpha and McDonald's omega, observing values above the cutoff point recommended in the literature (.70; Hair et al, 2009).

After conducting an exploratory study, *Study 2* was carried out to verify the same structure in a confirmatory analysis, and in a different sample. Results were adequate for the one-dimensional structure, being consistent with previous studies, which adapted the Flourishing Scale to other contexts (Hone et al, 2013; Silva & Caetano, 2013; Sumi, 2013). *Study 2* also provided evidence of convergence validity by demonstrating the relationship between flourishing and positivity. Therefore, these findings provide evidence of the validity (factorial and convergent) of the Flourishing Scale, justifying its use for research purposes. In addition, in both studies, internal consistency coefficients (Cronbach's alpha and McDonald's omega) were adequate, providing additional support for the psychometric adequacy of the measure.

Limitations and Future Directions

Although the main purpose of this research has been achieved, some potential limitations of the studies are reported. For example, convenience samples were used, and they might not be representative of the population. However, we had no intention of providing external validity of the results (generalization), focusing in gathering evidence about the scale's psychometric parameters. Alternatively, we used a larger sample size to allow the employed statistical analyzes (e.g. factor analysis, test of one-dimensionality, internal consistency), this was a short instrument and the recommendation of having a minimum of ten participants per item was assured (Hair et al., 2009).

Moreover, it is important to highlight that the Flourishing

Scale covers a wide amount of indicators (e.g. self-esteem, purpose) in a short measure. This scale could be less suitable in contexts requiring robust evaluation of well-being, hence, researchers should consider including other measures for mores specific assessments (e.g. *Subjective Well-Being Scal*e; Albuquerque & Tróccoli, 2004).

Finally, for future directions, we highlight the possibility of using the Flourishing Scale with other related measures (e.g. *SWB*, life satisfaction, *PANAS*), to understand the role of Flourishing in the set of constructs that often characterize subjective well-being. It would be also interesting to test its temporal stability (test-retest) in the Brazilian context, and to evaluate into what extent its scores are affected by social desirability. Investigating associations between flourishing and human values could also be interesting; it is estimated that people who give priority to humanitarian values (e.g. interactive, suprapersonal; Gouveia, 2013) have higher levels of flourishing. However, this is only a hypothesis, which will require further studies. Alternatively, it will be necessary to understand the impact of flourishing in people's behavior, assessing, for example, whether this construct influences the sense of personal fulfillment, the potential use of drugs and interpersonal relationships. In sum, the Flourishing Scale could be especially useful in large surveys, where time is usually very limited. Its use can also contribute to extend the literature on its correlates.

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