



# The development and initial validation of a multidimensional flourishing scale

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## Abstract

The objective of this paper is to develop a Multidimensional Flourishing Scale and to study its psychometric validation. The paper includes three different studies. Study 1 analyzes the development of the item for each dimension, the initial factor structure (using parallel analysis and exploratory factor analysis), and the internal consistency. In Study 2, the confirmatory factor analysis was used to confirm the scale structure, and also the convergent validity was analyzed. Finally, in Study 3, the construct validity and stability of the Multidimensional Flourishing Scale across six countries (Argentina, Chile, Colombia, Mexico, Portugal and Spain) are studied. The analyses presented herein show that the scale is psychometrically valid, and that has a strong internal consistency reliability coefficient for the entire scale and for each subscale in the different studies presented and the six countries included in the third study.

**Keywords** Emotional well-being · Psychological well-being · Social well-being · Flourishing · Validation

## Introduction

For the past several decades, literature on happiness and well-being has assiduously focused on the ancient Greek concept of *eudaimonia* (see Huta and Waterman 2014; Huta 2013; Ryff and Singer 2008; Ryff 1989; Keyes and Annas 2009; Fowers 2005; Richardson 2012), considering it a richer concept than the standard notion of happiness.

This literature usually quotes Aristotle's *Nicomachean Ethics* as a fundamental source of inspiration. Stemming from this interest, a wealth of literature on "human flourishing" has developed. These works often refer to "flourishing" as a standard translation of Aristotle's concept of *eudaimonia* (see Keyes 2002, 2007; Frederickson and Losada 2005; Ryff and Singer 2008; Seligman 2011; Hone et al. 2014; Huppert and So 2013; Diener et al. 2010).

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**Electronic supplementary material** The online version of this article (<https://doi.org/10.1007/s12144-018-9957-9>) contains supplementary material, which is available to authorized users.

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Flourishing includes both hedonic and eudaimonic dimensions and is considered by this literature to be a richer way of assessing people's well-being than the mere subjective measure of well-being commonly known as "happiness". Although it is a very new construct, "flourishing" has been characterized in similar ways in the past; for example, in Frederickson and Losada, "To flourish means to live within an optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience" (Frederickson and Losada 2005, p. 678); Huppert and So define it as "a combination of feeling good and functioning effectively" (Huppert and So 2013, p. 837); Seligman refers to "an arrangement of positive emotion, engagement, meaning, positive relationships and accomplishment" (Seligman 2011, pp. 16ff.); and finally, for Keyes (2002) it is the presence of high levels of emotional well-being, psychological well-being, and social well-being.

The evaluation of flourishing is an important topic for the life of each person as well as for the society and institutions. Keyes stated that "adults with less than flourishing mental health report more physical ailments and chronic disease, miss more days of work, use more health care (...), are more likely to die prematurely, and are more likely to develop mental illness" (Keyes 2010, p. 102). Each person wants to be happy and to have a flourishing life, therefore the promotion of individuals well-being should be a goal in itself for every institution and for the government, who have the power to make it possible. Consequently, first it is necessary to have the appropriate tools to evaluate it.

The purpose of this paper is to present a new multidimensional scale for measuring "flourishing" as per Keyes' conceptualization, as well as for exploring its validity and reliability.

Although several disciplines, including philosophy, economics, sociology and religious studies, have dealt with well-being, positive psychology has placed emphasis on its operationalization and measurement (Delle Fave et al. 2011, p. 6). In psychology, the concept of well-being has undergone several changes in recent years. For example, Ryff (1989) distinguishes two types of well-being: subjective and psychological. Diener (1984, 2000) defines subjective well-being as the equilibrium between positive and negative affect, while Ryff defines psychological well-being as reflecting optimal psychological functioning related to long-term emotional well-being. Thus, a person may feel full psychological well-being, yet experience more frequent negative emotions and less frequent positive emotions due to specific circumstances (Ryff 2014). Psychological well-being includes six essential components: "positive evaluations of oneself and one's past life (self-acceptance), a sense of continued growth and development as a person

(personal growth), the belief that one's life is purposeful and meaningful (purpose in life), the possession of quality relationships with others (positive relations with others), the capacity to manage effectively one's life and surrounding world (environmental mastery), and a sense of self-determination (autonomy)" (Ryff and Keyes 1995, p. 720).

Keyes (2002) long adhered to Ryff's theoretical model, but years later he added a component that he consider essential: social well-being. Social well-being is based on individuals' satisfaction with their cultural and social environment. It evaluates components beyond personal satisfaction with oneself, one's future or one's immediate resources to focus on the perceived quality of the society around the individual (Keyes 2002). Keyes includes five components of social well-being: quality of one's relationship to society and community (social integrity); positive appraisal of others (social acceptance); evaluation of oneself as a vital member of society (social contribution); positive and hopeful assessment of the evolution of society (social actualization) and finally, concern for knowing about the world and feelings of understanding the world (social coherence) (Keyes 1998).

Keyes (2013) believes that the presence of high levels of emotional, psychological, and social well-being contribute to a flourishing life. Keyes (2002) suggests that the experience of emotional well-being and positive functioning are required for a person to be categorised as flourishing. Thus, he developed a categorical diagnosis of mental health called the Mental Health Continuum Form, which contains 14 items (3 items about emotional well-being and 11 items about positive functioning). In order to be categorised as flourishing in life, people should have high levels on one of the two emotional well-being items, and high score on 6 out of 11 positive functioning items, during the past 30 days (Keyes 2005).

Diener et al. (2010) later developed a "flourishing scale" which included such aspects as relationships, self-esteem, purpose, and optimism. However, although they named it a "flourishing scale", it dealt mainly with psychological well-being. In addition, Huppert and So (2009, 2013) suggest that a measure of flourishing has two aspects: main characteristics including positive emotions, engagement/interest, and meaning/purpose; and others supplementary characteristics: self-esteem, optimism, resilience, vitality, self-determination and positive relationships. Seligman (2011) states that the promotion of a flourishing life is the main goal of the positive psychology proposal. Seligman (2011) developed a new theory of well-being namely P.E.R.M.A based on the presence of five important elements of flourishing: positive emotions (experience of joy, feel positive and contented), engagement (flow mental state characterized by feeling excited and interested in things), positive relationships (to have and cultivate

good relationship with others), meaning (to have a purpose in the life) and accomplishment (set goals for their life). PERMA's theory holds that cultivating these 5 elements will be of great help to increase our levels of satisfaction and motivation.

More recently, Hone et al. (2014) compared four ways of operationalizing flourishing: Keyes (2002), Huppert and So (2009), Diener et al. (2010), and Seligman (2011) (see Huta and Waterman 2014, for a review of different forms of operationalizing the eudaimonic aspect of flourishing). When appraising the four proposals, Hone et al. (2014, especially pp. 71–72) note that Keyes' conceptualization is the most complete out of them all, because it includes life satisfaction and social well-being. Specifically, Hone et al. (2014) argues that life satisfaction is a different aspect of flourishing, but because it is closely related to flourishing, it should not be excluded from a flourishing assessment. Additionally, Keyes' scale includes a social well-being aspect, what allows to evaluate participant's views of their performance in society. Finally, Hone et al. (2014) also suggests that Keyes' scale has more cross-cultural validation than the others theoretical proposals (p. 72). We consider this completeness our theoretical reason for adopting Keyes' conceptualization: its reliance on Aristotle's notion of *eudaimonia*. In effect, for Aristotle, man is essentially a political being. This notion goes beyond our contemporary conception of politics. The Aristotelian human being can achieve *eudaimonia* only within the *polis*, seeking the common interest of the whole community.

The Mental Health Continuum Form developed by Keyes evaluates the presence or absence of various emotional, psychological and social well-being indicators in order to measure life flourishing. Furthermore, the Form measures flourishing by following a set of diagnostic criteria. We have therefore decided to develop a scale that measures flourishing based on Keyes' dimensions (social well-being, psychological well-being and emotional well-being), which also evaluates the intensity with which each of the components of a flourishing life is expressed in adults. In order to achieve this, our instrument provides participants with the option of 5 answers for evaluating each item, instead of using a dichotomous scale with two possible answers. Furthermore, we propose a multidimensional model that will be tested using both exploratory and confirmatory factor analysis. On our scale, psychological well-being is operationalized as one's perception of meaning and purpose in life, engagement with personal activities (family and work), and stability, as well as one's general perception of family and work satisfaction. For emotional well-being, while Keyes' scale includes two general items of measurement, we consider it more appropriate to distinguish positive and negative emotions in a continuum. Our scale, therefore, measures positive and negative emotions over a two-week period using semantic differentials such as:

happy vs. sad; negative vs. positive. Finally, social well-being in our scale will include: 1) one's perception of being an important member of society, 2) feeling close to other members of society, 3) commitment to addressing problems faced by society, and 4) feeling that one's work contributes to social progress. Psychological and social well-being reflect a more stable perception, whereas emotional well-being is operationalized as a mental state.

## Aims of this Study

In Study 1, we describe the development of a Multidimensional Flourishing Scale based on Keyes' theoretical proposal and explore its reliability and factor structure.

In Study 2, we carried out a confirmatory factor analysis to confirm the scale structure, and study convergent validity, analysing the relation of the new Multidimensional Flourishing Scale with two well validated scales that measure flourishing.

Finally, the purpose of Study 3 is to empirically test to what extent the Multidimensional Flourishing Scale can be used across countries with a Luso or Hispanic heritage (Argentina, Chile, Colombia, Mexico, Portugal and Spain). Hence, we seek to investigate the validity and stability of our Multidimensional Flourishing Scale across these six countries. We postulate that there are no significant differences between the Multidimensional Flourishing Scale structure across the six samples. Since these six countries present important similarities in their socioeconomic profiles (they share comparable Human Development indicators: high or very high human development (<http://hdr.undp.org/en/countries>), have cultural similarities (e.g., the four Latin American countries have a predominantly European heritage –Spanish and Portuguese; share the same language, Spanish –with the exception of Portugal- and all six countries share the Catholic faith), we expect that the Flourishing Scale will remain invariant across these countries.

## Method

The objective of this paper is to develop and analyze the initial validation of the Multidimensional Flourishing Scale through three studies. Study 1 includes the development of the items for each dimension, the analysis of the initial factor structure (using parallel analysis and exploratory factor analysis) and the internal consistency. Study 2 includes the confirmatory factor analysis to confirm the scale structure, and also the study of the convergent validity. Finally in Study 3 investigates the construct validity and stability of the Multidimensional Flourishing Scale across the six countries (Multigroup comparison).

## Study 1

### Participants and Procedure

Participants were recruited from three different multinational companies operating in Argentina. The permission to conduct the study was obtained from the executive management and human resources departments of each company. Subsequently, all employees received the invitation to participate in the study via email with a link to access the questionnaires. Participation was voluntary and the confidentiality of answers was guaranteed.

The sample consisted of 100 male and 205 female participants from 22 to 79 years old ( $M = 43.92$  years old;  $SD = 7.33$ ) from Buenos Aires, Argentina. In relation to marital status, most of them were married or lived together with their partners (91.2%), followed by 5.3% of divorced or widowed participants and a minority were single (3.5%). The 29% of the sample were directors, 41% were middle managements and finally the 30% were operators in the company.

### Instrument

**The Multidimensional Flourishing Scale** To construct the Multidimensional Flourishing Scale the guidelines suggested by Worthington and Whittaker (2006) were followed. First, a literature review of flourishing based on Keyes' theoretical proposal was conducted. Based on this review the 45 items (15 items for each dimension) were constructed to measure the three dimensions of flourishing proposed by Keyes (2005). Second, five expert psychologists in well-being were asked how well each item reflected Keyes's concept of flourishing (content validity), and to score the clearness of each item. Additionally, the experts could add suggestions about items. Each expert had to score each item using a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items that obtained an Aiken's V at .80 or higher in each evaluated aspect were remained (Escurra 1989). A final pool of 30 items was obtained, each item was phrased in a positive manner with the exception of two items. A five-level Likert scale (strongly agree = 5 to strongly disagree = 1) was used to measure social and emotional dimensions and a five-level semantic differential scale was used to measure emotional dimensions (e.g. positive = 5 to negative = 1).

## Results

### Parallel Analysis and Exploratory Factor Analysis

In order to determinate how many factors should be retained the Parallel Analysis was carried out (Lorenzo-Seva and Ferrando 2006). The method used to obtain random correlation matrices was permutation of the raw data (Buja and Eyuboglu

1992). If the eigenvalue of a factor derived from real data exceeded the 95th percentile of the sample distribution, it was accepted as significant. This analysis was carried out using FACTOR program (Lorenzo-Seva and Ferrando 2006).

The Kaiser Meyer Olkin (KMO) was .90 and the Bartlett's test of sphericity was 1562.11,  $p \leq .001$ , suggesting that the relationship between flourishing scale's items were pretty strong to continue with a factor analysis (Tabachnick and Fidell 1996). An exploratory factor analysis (EFA) of the 30-item Multidimensional Flourishing Scale was conducted using SPSS software. Factors were extracted using Maximum Likelihood methods with oblimin rotation. The items were eliminated if they did not meet three different criteria: (1) set up a separate factor of at least 3 items, (2) to have a load at .40 or higher, and (3) difference of loadings among factors does not surpass .10 (Kahn 2006, Worthington and Whittaker 2006). A scale with 3 dimension and 12 items in total were resulted. Table 1 illustrates the factor loading for each item and total variance for the three-factor model.

The three factors showed moderate correlation: social well-being correlated with psychological well-being ( $r = .51$ ,  $p \leq .001$ ) and with emotional well-being ( $r = .24$ ,  $p \leq .001$ ); psychological well-being correlated with emotional well-being ( $r = .48$ ,  $p \leq .001$ ).

### Internal Consistency

The coefficient H and total Omega coefficient were used to examine the internal consistency of the scale, because they are

**Table 1** Exploratory factor analysis of multidimensional flourishing Scale

Factor name and items	Loading		
	1	2	3
1. Factor: Social well-being			
Item 1	.84		
Item 2	.84		
Item 3	.82		
Item 5	.78		
2. Factor: Psychological well-being			
Item 6		.88	
Item 7		.87	
Item 8		.76	
Item 9		.76	
3. Factor: Emotional well-being			
Item 16			.85
Item 18			.78
Item 19			.85
Item 20			.90
Variance per Factor	26.19	23.65	21.33
Total variance	71.18		

more robust method than coefficient Alpha (McNeish 2017). The Multidimensional Flourishing Scale as a whole had an internal consistency of .97 coefficient  $H$  and .96 total Omega. The three subscales had coefficient  $H$  and total Omega of .89 for social well-being, coefficient  $H$  of .90 and total Omega of .89 for psychological well-being; finally .92 coefficient  $H$  and .91 total Omega for emotional well-being. To estimate coefficient  $H$  and total Omega, McNeish's instructions was used (McNeish 2017).

## Discussion

The EFA results establish empirical support for the Multidimensional Flourishing Scale and confirm the three-dimensional measurement instrument to assess the facets of Keyes' conceptualization of flourishing (2005). The first factor, social well-being, contains four items that measure an individuals' perception of engagement with social problems and the perception of one's own social contribution. The second factor, psychological well-being, contains four items that measure one's perception of meaning and purpose in life, engagement with personal activities (family and work), and general perception of family and work satisfaction. The third factor, emotional well-being, contains four items that measure positive and negative emotions during the past 2 weeks.

The Multidimensional Flourishing Scale demonstrated good internal consistency reliability of the scale and the three subscales.

## Study 2

### Participants and Procedure

A cross-sectional study was carried out using a non-probability sample of employees in four different multinational companies operating in Argentina. We followed the same procedure described in Study 1 to collect the data. Study 2 included 179 male and 77 female participants from 22 to 59 years old ( $M = 38.54$  years old;  $SD = 9.01$ ) from Buenos Aires, Argentina. In relation to marital status, the most were married or lived together with their partners (68%), followed by 27% of single participants and a minority were divorced or widowed (5%). The 29% of the sample were directors, 36% were middle managements and finally the 35% were operators in the company.

### Instruments

1. *The Multidimensional Flourishing Scale.* Participants completed the 12-item version of the Multidimensional Flourishing Scale they obtained in Study 1. The internal reliability in this study was .73 total Omega for social

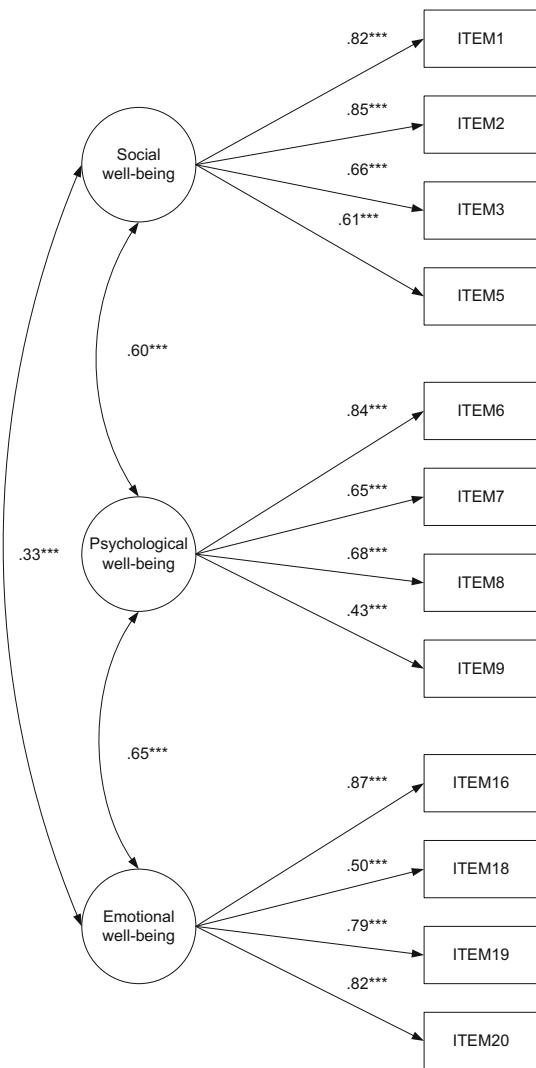
well-being, .75 total Omega for psychological well-being and .85 total Omega for emotional well-being and .84 total Omega for the total score.

2. *The Mental Health Continuum-Short Form (MHC-SF)* (Keyes 2005) assesses the presence of flourishing with 14 items. Participants scored the frequency of each affect in the last month using a 6-point Likert scale (from never to every day). The Mental Health Continuum-Short Form includes two items of emotional well-being (eg. happy), one item of life satisfaction, six items of psychological well-being (eg. "That you liked most parts of your personality"), and five items of social well-being (eg. "That you had something important to contribute to society"), with each item under psychological and social well-being representing one dimension. The internal reliability was .82 in this study.
3. *Flourishing Scale (FS)* (Diener et al. 2010). "The Flourishing Scale consists of eight items describing important aspects of human functioning, ranging from positive relationships to feelings of competence to having meaning and purpose in life" (Diener et al. 2010, p.146). Every Flourishing Scale' item is evaluated using a scale from 1 to 7 that ranges from Strong Disagreement to Strong Agreement. The eight items are phrased in a positive way (eg. "I am engaged and interested in my daily activities"). The internal reliability was .87 in this study.

## Results

### Confirmatory Factor Analysis

We tested a three-factor model, with psychological well-being, social well-being and emotional well-being as separate factors. Because a multivariate normality was found the maximum likelihood estimation (MLE) method was used with AMOS 19. Based on Kline's (1998) suggestion the following indexes were used to assess the model fitness: chi-square  $\chi^2$ , the ratio of the chi-square statistic to degrees of freedom ( $\chi^2/df$ ), the root mean square error of approximation (RMSEA), the root mean square residual (RMR), the standardized root mean square residual (SRMR), the adjusted goodness of fit index (AGFI) and the comparative fit index (CFI). The results indicated that the theoretical three-factor model fit the data well:  $\chi^2 = 114.6$ ,  $df = 51$ ,  $p \leq .001$ ,  $\chi^2/df = 2.25$ , AGFI = .93, CFI = .95, RMSEA = .07, RMR = .05, and SRMR = .05. A competing model of the flourishing scale was then tested. The one-factor model did not fit the data well  $\chi^2 = 526.13$ ,  $df = 54$ ,  $p \leq .001$ ,  $\chi^2/df = 9.74$ , AGFI = .66, CFI = .51, RMSEA = .19, RMR = .13 and SRMR = .13. These results suggest that the three-factor solution fit better.



Note: \*\*\*  $p < .001$ ; \*\*  $p < .01$ , \*  $p < .05$

**Fig. 1** The path diagram of the Three Factor Model. Standardized factor loadings are shown on the straight arrows, whereas factors' terms intercorrelations are shown on the curved arrows. (Study 2). Note: \*\*\*  $p < .001$ ; \*\*  $p < .01$ , \*  $p < .05$

The theoretical model is illustrated in Fig. 1. The final version of the Multidimensional Flourishing Scale is shown in the Appendix.

Relationship of the Multidimensional Flourishing Scale with the Mental Health Continuum-Short Form (MHC-SF) and Flourishing Scale (FS).

For the purpose of examining the convergent validity of the three dimensions of the Multidimensional Flourishing Scale, we correlated each factor with The Mental Health Continuum-Short Form (MHC-SF) by Keyes (2005) and with Flourishing Scale (FS) by Diener et al. (2010).

The Mental Health Continuum-Short Form (MHC-SF) by Keyes (2005) has shown a moderate correlation with social, emotional and psychological dimensions of the Multidimensional Flourishing Scale. Moreover, the Flourishing Scale (FS) by Diener et al. (2010) has shown a moderate correlation with emotional and psychological dimensions and a high association with psychological well-being dimension of the Multidimensional Flourishing Scale (see Table 2). These results indicate that the new scale has a good convergent validity.

## Discussion

The purpose of Study 2 was to analyse the structural validity of the Multidimensional Flourishing Scale and study the convergent validity of the Scale's three factors. The CFA results establish empirical support for the Multidimensional Flourishing Scale and confirm the three-dimensional measurement instrument to assess the facets of Keyes' (2005) conceptualization of flourishing. Finally, the Multidimensional Flourishing Scale scores were found to correlate in expected directions with the other flourishing scales.

## Study 3

### Participants and Procedure

A total number of 1500 adults from 6 different countries with Luso-Hispanic roots participated in this study (Argentina, Chile, Colombia, Mexico, Portugal and Spain). Table 3 shows the characteristics of the different samples. The national adult samples were collected

**Table 2** Descriptive statistics and correlations among the three dimensions of the multidimensional flourishing scale and the variables included in the study

Variables	M	SD	Social well-being	Psychological well-being	Emotional well-being	Mental health continuum form	Flourishing scale
Social well-being	14.97	2.60	—				
Psychological well-being	17.07	2.32	.44***	—			
Emotional well-being	15.80	2.96	.26***	.45***	—		
Mental Health Continuum Form by Keyes (2005)	11.34	2.77	.32***	.44***	.42***	—	
Flourishing scale by Diener et al. (2010)	46.91	5.91	.43***	.66***	.48***	.44***	—

\*\*\*  $p < .001$

**Table 3** Descriptive statistics for the samples

Country	<i>n</i>	Average age	SD	Females (%)	Number of child	Education level				Civil status		
						Elementary school	High school	University or colleague	Post-graduate degree	Single	Married or with a partner	Separated or divorced
Argentina	250	42.7	5.65	50%	3.28	0%	9.6%	58.8%	31.6%	3%	94%	3%
Chile	250	42.1	7.09	58%	2.90	1.2%	9.6%	42.4%	46.8%	8.8%	88.8%	2.4%
Colombia	250	42.3	6.89	50%	1.86	0.8%	18.8%	27.6%	52.8%	4.4%	88.8%	6.8%
Mexico	250	38.6	9.00	60%	1.56	0%	2.4%	40.8%	56.8%	16.4%	75.2%	8.4%
Portugal	250	41.6	6.18	50%	3.2	0.8%	10.8%	53.6%	34.8%	1.2%	96%	2.8%
Spain	250	42.8	8.00	62%	2.58	1.6%	7.6%	51.6%	39.2%	2.4%	92.8%	4.8%

through a website: [www.globalhomeindex.org](http://www.globalhomeindex.org). Data included in the study was collected from different foundations or institutions located in each country.

## Instrument

**The Multidimensional Flourishing Scale** Participants completed the 12-item version obtained in Studies 1 and 2 of the Multidimensional Flourishing Scale. The scale was translated into Portuguese and back into Spanish to guarantee comparability. The Internal Consistency of the Multidimensional Flourishing Scale for each country is presented in Table 4.

## Results

Factor structure and factor validity of the Multidimensional Flourishing Scale in the different Samples.

The results have shown that the theoretical three-factor model fit the data well in the six countries included in this study. See Table 5.

Factorial invariance of the Multidimensional Flourishing Scale structure across six countries.

A multiple group analysis was used to test if the three-factor model was invariant across the six countries. A series of nested models (Model 1 vs Model 2, Model 2 vs Model 3,

Model 3 vs Model 4) were analysed examining the change in model chi-square ( $\chi^2$ ) values and comparative fit index values. Model 1 (configural invariance) tested if the structure was equal across countries; Model 2 (metric invariance) tested whether different groups responded equal to the items, Model 3 (scalar invariance) tested invariance at the intercept level, and Model 4 (error variance invariance) tested if the error variance was the same across countries (Milfont and Fischer 2010).

The results indicated statistically significant  $\chi^2$  differences for all models compared (see Table 6). “Because the  $\chi^2$  difference tests could be influenced by sample size, the underlying assumption that the model fits the sample data perfectly has long been recognized as being problematic” (Mesurado et al. 2016, p. 291, also see Kline 1998; Jöreskog and Sörbom 1996; Milfont and Fischer 2010; Kim et al. 2006). Consequently, other fit indices could be used, as for example, difference of CFI between models, this difference should be less than or equal to .01 to indicate invariance (Cheung and Rensvold 2002).

The multi-group CFA results suggested that the factor structure of the three-dimensional model is reproduced across countries, but with some limitations. The results indicate that configural invariance, metric invariance and scalar invariance may hold across the six countries, but error variance-invariance does not (see Table 6).

**Table 4** The internal consistency of the multidimensional flourishing scale for each country

Country	Social well-being		Psychological well-being		Emotional well-being		Total score	
	Coefficient H	Total omega	Coefficient H	Total omega	Coefficient H	Total omega	Coefficient H	Total omega
Argentina	.86	.86	.81	.70	.88	.86	.95	.93
Chile	.88	.84	.80	.62	.90	.87	.95	.92
Colombia	.84	.83	.80	.80	.88	.87	.94	.94
Mexico	.86	.86	.72	.71	.88	.87	.94	.93
Portugal	.86	.86	.81	.80	.85	.83	.95	.94
Spain	.85	.85	.79	.78	.88	.87	.94	.94

**Table 5** Fit indexes for three-factor model in the six countries

Country	$\chi^2$	df	$\chi^2/df$	AGFI	CFI	RMR	SRMS
Argentina	132.06	51	2.59	.92	.93	.03	.03
Chile	152.26	51	2.98	.90	.91	.03	.03
Colombia	145.10	51	2.84	.91	.91	.04	.04
Mexico	134.01	51	2.62	.92	.94	.03	.03
Portugal	124.23	51	2.43	.92	.94	.03	.03
Spain	156.19	51	3.06	.90	.92	.04	.04

## Discussion

The purpose of Study 3 was to validate the structure of the Multidimensional Flourishing Scale in 6 different countries with Luso-Hispanic roots (2 in Europe and 4 in Latin America). The CFA results of the scale in each country establish empirical support for the Multidimensional Flourishing Scale in each country and confirm the three-dimensional measurement instrument to assess the facets of Keyes' (2005) conceptualization of flourishing. In general, we also found good Internal Consistency of The Multidimensional Flourishing Scale for each country, both for each individual dimension and for the total score. Finally, this study indicates that configural invariance, metric invariance and scalar invariance may hold across the six countries with Luso-Hispanic roots, but error variance-invariance does not. Although this finding could affect the cross-cultural stability of the scale; Milfont and Fischer (2010) stated that the scalar invariance model is "the last model necessary to compare invariance across groups" (p. 115) and testing error variance invariance is optional. In future studies, it will be necessary to test convergent validity of the Multidimensional Flourishing Scale in these countries.

## General Discussion

Given the growing interest in the flourishing construct within philosophy and psychology, its measurement has become highly relevant. The purpose of this paper was to take Keyes' definition of flourishing and develop a brief, valid

and reliable scale for measuring it. The results show initial evidence that this objective was fulfilled. This new scale might assist researchers, as well as career counsellors and psychologists working in different fields, such as clinical or occupational psychologists, for example.

The analyses presented herein demonstrated that the scale is psychometrically valid, has a strong internal consistency reliability coefficient for the entire scale and for each subscale in the different studies presented and the six countries included in the third study. The EFA and CFA results establish empirical support for the Multidimensional Flourishing Scale and confirm the three-dimensional measurement instrument to assess the facets of Keyes' (2005) conceptualization of flourishing. Emotional, psychological and social well-being appear to be fundamental to a flourishing life in adults. This new Multidimensional Flourishing Scale for social well-being includes 1) one's perception of being an important member of society, 2) feeling close to other members of society, 3) commitment to addressing the problems faced by society, and 4) feeling that one's work contributes to social progress. Psychological well-being is composed of: 1) one's perception of meaning and purpose in life, 2) engagement with personal activities (family and work), and 3) a stable and general perception of family and work satisfaction. Finally, emotional well-being includes the feeling of positive and negative emotions. In other words, in this new scale, psychological and social well-being measure long-term well-being, while the emotional dimension is operationalized as short-term well-being.

Moreover, this paper suggests that the Multidimensional Flourishing Scale has good convergent validity, since a moderate relationship was found between the new scale and validated scales that measure flourishing: the Mental Health Continuum-Short Form (MHC-SF) (Keyes 2005) and Flourishing Scale by Diener et al. (2010). In our opinion, the new scale has the advantage that it was designed to evaluate the three flourishing dimensions, by using ordinal scores that allow participants to indicate the gradation of their experiences. In contrast to the Mental Health Continuum-Short Form (MHC-SF) that uses a dichotomous scale and the Flourishing Scale that is unidimensional.

**Table 6** Fix indexes for multigroup factor analyses across the sex countries

	$\chi^2$	df	P	$\chi^2/df$	AGFI	CFI	RMSEA	$\Delta\chi^2$	$\Delta\chi^2/df$	$\Delta\text{CFI}$
Model 1	843.87	306	.000	2.76	.91	.93	.03			
Model 2	964.38	351	.000	2.75	.90	.92	.03	120.51*	45	.01
Model 3	1024.8	381	.000	2.69	.90	.91	.03	60.42*	30	.01
Model 4	1251.5	441	.000	2.84	.87	.89	.03	226.71*	60	.02

Model 1 (configural invariance), Model 2 (metric invariance), Model 3 (scalar invariance) and Model 4 (error variance invariance)

\* $p < .001$

## Limitations and Future Studies

This paper has different limitations. First, self-report surveys were used to measure flourishing in the three studies developed here. This methodology is appropriate for measuring this variable as previous studies have shown (Keyes 2013). However, future studies could use complementary ways, such as report from family members, friends or coworkers. Second, the studies included not representative samples and in third study the participants in the sample were drawn from only six countries with Luso-Hispanic origins. Future research should examine cultural differences that occur in the conceptualization and experience of flourishing. The third limitation of this study is that the samples used for Studies 1 and 2 present some variations as regards to gender, age and marital status that could modify results. Furthermore, future research should include other variables to study the convergent and discriminant validity of the new scale. For future directions, could be interesting the examination of the incremental validity of the new scale over and above other alternative flourishing scale, on specific external criteria (e.g. life satisfaction).

Moreover, it is necessary to test three-dimensionality and its stability through other age groups as well as for other European, Asian and African countries. In addition, future studies should aim to ascertain whether this new measure of flourishing varies by age group, between large and small cities, etc. Finally, our surveys did not measure other aspects that could be important to a flourishing life, such as spiritual well-being. Spiritual well-being has been conceptualized as “a personal search for meaning and purpose in life, connection with a transcendent dimension of existence, and the experiences and feelings associated with that search and that connection” (Peterman et al. 2002, p. 49). It may be important to consider the spiritual well-being as an additional aspect of flourishing in future research.

**Funding** This study was funded by Universidad Austral (grant number 2015-02).

## Compliance with Ethical Standards

**Conflict of Interest** Authors declare that they have no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was also obtained from all individual participants included in the research. This article does not contain any studies with animals performed by any of the authors.

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