

The Psychometric Properties of the Turkish Version of the Riverside Life Satisfaction Scale-Adult Form

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Abstract

We validated the psychometric properties of the Riverside Life Satisfaction Scale for Turkish culture. A standard back-translation procedure was performed. A stratified sample (N=493; age range = 18–70 years) was selected from North Cyprus. Results showed that one-factor model for the Riverside Life Satisfaction Scale was a good fit. Composite reliability was .77 and factor loadings were significant (.515-.825). Significant correlations were found between the scale and the Satisfaction With Life Scale, Psychological Well-Being Scale—Short Form, Positive and Negative Affect Schedule, and extraversion, agreeableness, conscientiousness, and neuroticism subscales of the Big Five Inventory. The Riverside Life Satisfaction Scale is an up-to-date, standard, and powerful alternative scale that is statistically strong, easy-to-apply, and its reversed items were free from measurement bias. It is thus valid and reliable to use in Turkish culture, indicating the crosscultural value of the current study.

Keywords

life satisfaction, Riverside Life Satisfaction Scale, validity, reliability, North Cyprus

Life satisfaction (LS) is a personal evaluation of life that changes according to the perception of each individual. LS is a cognitive dimension of subjective well-being (Diener et al., 1985). The concepts of happiness, LS, and well-being are used interchangeably. Well-being has been investigated for years to understand individuals' happiness. It comprises two factors: psychological well-being (PWB) that consists of self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989), and subjective well-being (SWB) that consists of LS, positive affect (PA), and absence of negative affect (NA; Diener et al., 1985).

Although SWB and PWB were defined as separate structures, recent studies have reported that they have a complementary structure, and they are positively associated (Chen et al., 2013; Ryan & Deci, 2001). Joshanloo (2018) found that PWB was a predictor of SWB. In other words, SWB and PWB evaluate the same structure—well-being (Disabato et al., 2015).

According to top-down theory, LS depends on individuals' predispositions such as personality (Brief et al., 1993). Personality traits greatly shape an individual's emotions, thoughts, and behaviors (Cüceloğlu, 2017). Like personality, LS is a consistent construct over time (Lucas, 2018; Proctor et al., 2017). LS is positively correlated with extraversion, agreeableness, and conscientiousness. Studies have shown that people with high levels of extraversion (Lucas, 2018;

Margolis et al., 2019; Pollock et al., 2016), agreeableness (Lucas, 2018; Margolis et al., 2019; Pollock et al., 2016; Stolarski & Matthews, 2016), and conscientiousness (Lucas, 2018; Margolis et al., 2019; Pollock et al., 2016; Stolarski & Matthews, 2016) also have high LS. However, LS is negatively correlated with neuroticism. In other words, the level of neuroticism decreases when the level of LS increases (Lucas, 2018; Margolis et al., 2019; Pollock et al., 2016).

Affect is another important factor in LS judgment (Berenbaum et al., 2013; Busseri, 2015; Dumitrache et al., 2018; Pollock et al., 2016). People with low NA levels typically have significantly higher LS; in contrast, LS is positively correlated with PA. People with a high level of PA also have higher LS (e.g., Pollock et al., 2016). Other studies showed that PA positively predicted LS (Chang et al., 2019; Zhang, 2016).

Each person perceives and evaluates their lives differently (social relationships, health, economy, etc.) and people's perceptions change over times. The concept of LS has been the subject of many studies for years (e.g., Choi et al., 2019;

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Diener et al., 1985; Heizmann & Böhnke, 2019; Pollock et al., 2016). To evaluate LS, single-item measurements can be used; however, they may fail to capture all of the LS (Margolis et al., 2019). Among the multi-item measurement tools, the Satisfaction With Life Scale (SWLS) is commonly used (Diener et al., 1985). Temporal Satisfaction With Life Scale (TSWLS) is another alternative used to measure LS at three different periods (past, present, and future; Pavot et al., 1998). Despite their strengths (high validity and reliability), there are some criticisms of these scales. The SWLS has been criticized for its lack of up-to-date items and lack of reverse items, which lead to statistical problems (Margolis et al., 2019). In addition, although individual and cultural differences affect the results, it is possible to evaluate the LS of an individual by measuring the domain satisfaction (work, friendship, health, etc.; Akyürek et al., 2019). Consequently, the Riverside Life Satisfaction Scale (RLSS) was developed by Margolis et al. (2019). The RLSS is an easy-to-apply scale that is not hindered by measurement bias and it has inverse items. Recommendations were made to extend the validity of this scale by conducting additional studies (Margolis et al., 2019).

As with all other cultures, LS has been studied numerous times in Turkish culture (e.g., Durak et al., 2010; Gurbuz et al., 2018). Most of the scales that are related to LS adapted to Turkish language and are used. Collecting up-to-date data with scales in people's native language is an important scientific and statistical issue. There is a need for an up-to-date scale to evaluate LS in Turkey and North Cyprus. At this point, a key question had to be answered (Deniz, 2007): Would it be more useful to develop a new scale or to adapt and translate an existing valid and reliable scale? In this study, we tackle the latter part of this question. Adapting and testing the psychometric properties of an up-to-date scale is important for achieving statistically healthy results and comparing across cross-cultural studies.

The RLSS focuses on individuals' evaluation of life contentment. The RLSS is a short, six-item, self-report scale that assesses LS on a 7-point Likert-type scale. It takes almost 2 to 4 min to administer. The RLSS is preferred to the other measures of LS because (a) scale items are as short as possible, (b) scale items are easily understandable, (c) it is an easy-to-apply scale, and (d) it has inverse items (thus reducing measurement bias).

Based on an exploratory factor analysis (EFA) of the RLSS, Margolis et al. (2019) reported a single-factor structure that explained 58% of the valid variance. The RLSS was also internally consistent (Cronbach's $\alpha=.86$) and it was significantly correlated with other psychological constructs: PA, NA, extraversion, agreeableness, conscientiousness, and PWB were all significantly associated with the RLSS and more strongly correlated as compared with the SWLS (Margolis et al., 2019). We thus examined the psychometric properties and factor structure of the Turkish version of the RLSS and validated it by correlating it with the SWLS, Big

Five Inventory (BFI), Psychological Well-Being Scale—Short Form (PWBS-SF), and Positive and Negative Affect Schedule (PANAS) in Turkish culture, using participants across a wide age range (adults aged 18–70 years).

Method

This study employed a cross-sectional quantitative design and participants answered the questionnaire in one face-to-face session, which took approximately 10 min. Stratified sampling, which is a random sampling method, was conducted to recruit various participants (students, workers, retirees, etc.). The IBM SPSS 25.0 and IBM AMOS 21.0 (IBM, Armonk, NY, USA) were used for data analysis.

Translation of the RLSS

This research was conducted after obtaining ethical approval from the Cyprus International University Ethics Committee (No. 100–575; https://ebys.ciu.edu.tr/enVision/Validate Doc.aspx?V=BEKVZ859). In the first step, permission was obtained for translation of the RLSS; then, a standard backtranslation procedure was performed (Çapık et al., 2018). The scale was translated by four different language and field experts from English to Turkish. Back translations were made by four different field experts and linguists. All translations were evaluated by a team of three people consisting of field and language experts and finalized. Before the implementation, a small group (n = 30, age range = 18–70 years; $M_{\rm age} = 33.7 \pm 1.63$ years) that resembled the target sample was piloted. After that, the scale was evaluated for comprehensiveness and the necessary adjustments were made and finalized before the actual implementation.

Participants and Procedure

The population of the study consisted of individuals (N = 493; 66.94% women) from Northern Cyprus. Participants' ages ranged from 18 to 70 (M = 34.40, SD = 13.81) years. Inclusion criteria were as follows: aged between 18 and 70 years, spoke Turkish, not included in any psychiatric diagnosis process, and volunteered to participate. Most participants had at least a university bachelor's degree (53.55%), were in a relationship (52.5%), and were employed (55.8%). Participants' vocations ranged widely (university students, nurses, policeman, teachers, engineers, drivers, executive managers, etc.). Most (59.63%) stated that they had a moderate personal income, and 72% had social support from their family or friends.

Before data collection, permissions were granted from institutions (universities, workplaces, etc.). During the data collection phase, scales were distributed to the participants with informed consent forms. After information (e.g., anonymity, information that participants can withdraw at any time, confidentiality) about the purpose of the study was

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provided, participants provide written informed consent. Data confidentiality was ensured.

Instruments

Participants were asked questions about demographic characteristics such as age (continuous), sex (dichotomous), education (ordinal, four levels), relationship status (dichotomous), working status (dichotomous), personal income (ordinal, four levels), and social support (dichotomous). In addition to the demographic form, the RLSS, SWLS, BFI, PWBS-SF, and PANAS were used in this study.

RLSS. The RLSS (Margolis et al., 2019) uses a 7-point Likert-type (1 = strongly disagree, 7 = strongly agree), one-dimensional scale to assess six items (e.g., "I like how my life is going" and "I want to change the path my life is on"). Total scores ranged from 6 to 42, and higher scores indicated higher levels of LS. Cronbach's alpha value was .78 in the original study (Margolis et al., 2019).

SWLS. The SWLS was originally developed by Diener et al. (1985). The scale consists of five items (e.g., "I am satisfied with my life" and "My life conditions are perfect") measured with a 7-point Likert-type scale (1 = I strongly disagree, 7 = absolutely I agree). The Turkish version is valid and reliable (Yetim, 1991): Cronbach's alpha was .86, and test–retest reliability was .73. A factor analysis revealed that the scale explained 38% of the variance with a single-factor structure. Cronbach's alpha was .85 in this study.

BFI. The BFI includes five personality traits: neuroticism, extraversion, openness, agreeableness, and conscientiousness (Benet-Martinez & John, 1998). The scale contains 44 short items (e.g., "Full of energy" and "secretive"). Answers are provided on a 5-point Likert-type scale ($1 = I \ do \ not \ agree \ at \ all, 5 = I \ totally \ agree$). The Turkish adaptation study was conducted by Sümer and Sümer (Schmitt et al., 2007). In this study, Cronbach's values were .71, .72, .73, .68, and .71 for neuroticism, extraversion, openness, agreeableness, and conscientiousness dimensions, respectively.

PWBS-SF. The PWBS-SF was developed by Ryff and Keyes (1995). An 18-item Turkish adaptation study (PWBS-TR-SF) was conducted by Imamoglu in 2004, and the Cronbach's alpha was .79 (Beydoğan, 2008). Answers are provided on a 5-point Likert-type scale (1 = *I do not agree at all*, 5 = *I totally agree*; for example, "I like many aspects of my personality"). In this study, the PWBS-TR-SF was used as a one-dimensional scale (Beydoğan, 2008). Cronbach's alpha was .75 in this study.

PANAS. The PANAS was developed by Watson et al. (1988). Answers are provided on a 5-point Likert-type scale (1 = little or no, 5 = $too\ much$), and there are 20 items including

positive (e.g., "excited") and negative (e.g., "unhappy") emotional expressions. A Turkish adaptation study was conducted by Gençöz (2000). Cronbach's alphas were .84 for PA and .81 for NA in this study.

Results

The scales were administered to 540 individuals. Participants answered 111 questions. The response rate was 91.29% (493 valid questionnaires). Missing data were checked. Participants who did not complete most questions were excluded from the study.

Table 1 summarizes the means, standard deviations, and Cronbach's alpha coefficients for the RLSS and other scales separately. Following Tabachnick and Fidell (2013) and skewness and kurtosis variables, the data set showed a normal distribution.

Concerning reliability, Cronbach's alpha, split-half, and item-total correlations were examined. The composite reliability value was .765, which was acceptable (>.60) given the number of items in the scale (Ilhan et al., 2015). Cronbach's alpha was .78, which was acceptable (>.70; Büyüköztürk, 2012). The alpha coefficient for the first half of the three-item scale was .659 and the alpha coefficient for the second half was .595. The correlation coefficient between them was .661. Therefore, the RLSS was deemed reliable.

The total correlation of items ranged from .395 to .619. The item with the lowest item-total correlation was, "Those around me seem to be living better lives than my own" and the item with the highest item-total correlation was, "I like how my life is going."

Table 2 shows the correlations between RLSS and other scales. The relationship between RLSS, BFI, PWBS-SF, SWLS, and PANAS was examined, and a criterion-related validity study was conducted. There were positive and weak correlations between the RLSS and the extraversion, agreeableness, and conscientiousness subdimensions of the BFI (p < .05). There was a positive and moderate correlation between the RLSS and the PWBS-SF (p < .05). There was a positive and moderate correlation between the RLSS and the SWLS (p < .05). There were positive and weak correlations between the RLSS and PA but negative and moderate to strong correlations between the RLSS and NA scores (p < .05).

An EFA was conducted to determine the factor structure of the RLSS. To determine whether the data set was suitable for a factor analysis before performing the EFA, the Kolmogorov–Smirnov test, Kaiser–Meyer–Olkin (KMO) coefficient, and Bartlett's sphericity test were performed. The Kolmogorov–Smirnov test was conducted to examine whether the data set followed a normal distribution, the QQ plot was examined, and skewness–kurtosis values were checked. Although the results of the Kolmogorov–Smirnov test were significant, the data set followed a normal distribution owing to the favorable QQ plot graph and skewness–kurtosis values within ± 1.5 .

Table 1. Descriptive Statistics and Cronbach's Alphas.

Scales	N	\overline{x}	SD	Minimum	Maximum	α	Skewness	Kurtosis
RLSS	493	22.11	7.02	5.00	35.00	.78	-0.175	-0.419
Extraversion	493	3.52	0.75	1.00	5.00	.72	-0.457	0.101
Agreeableness	493	3.96	0.55	1.89	5.00	.63	-0.530	0.199
Conscientiousness	493	3.95	0.64	1.67	5.00	.71	-0.577	-0.098
Neuroticism	493	2.76	0.78	1.00	4.75	.71	-0.040	-0.288
Openness	493	3.68	0.64	1.30	5.00	.73	-0.408	0.121
Psychological well-being	493	67.01	7.33	33.00	87.00	.75	-0.417	0.642
Satisfaction with life	493	22.25	6.82	5.00	35.00	.85	-0.262	-0.613
Positive affect	493	34.32	7.59	12.00	50.00	.84	-0.232	-0.376
Negative affect	493	19.67	6.70	10.00	47.00	.81	1.076	1.338

Note. RLSS = Riverside Life Satisfaction Scale.

Table 2. Correlations Between RLSS and Other Scales.

Scales	I	2	3	4	5	6	7	8	9
I. RLSS	ı	_	_	_	_	_	_	_	_
2. Ext.	.20**	1	_	_	_	_	_	_	_
3. Agr.	.17**	.16**	1	_	_	_	_	_	_
4. Cons.	.16**	.29**	.29**	I	_	_	_	_	_
5. Neu.	33**	23**	39**	33**	1	_	_	_	_
6. Open.	.03	.39**	.16**	.27**	18**	1	_	_	_
7. PA	.24**	.38**	.16**	.31**	27**	.38**	1	_	_
8. NA	36**	18**	32**	23**	.47**	06	19**	I	_
9. PWB	.36**	.32**	.23**	.35**	29**	.34**	.38**	37**	1
IO. SWLS	.67**	.25**	.09	.19**	24**	.08	.31**	35**	.33**

Note. RLSS = Riverside Life Satisfaction Scale; Ext. = extraversion; Agr. = agreeableness; Cons. = conscientiousness; Neu. = neuroticism; Open. = openness; PA = positive affect; NA = negative affect; PWB = psychological well-being; SWLS = Satisfaction With Life Scale. *p < .05. **p < .01.

The KMO coefficient provides information about whether the data matrix is suitable for factor analysis and whether the data structure is suitable for factor extraction. For factorization, KMO is expected to be higher than .60. The Bartlett's test examines whether there is a relationship between variables on the basis of partial correlations (Büyüköztürk, 2009). The KMO coefficient of the RLSS was .76, and the estimated chisquare value was 1,113,062 (p < .05). According to the results of KMO and Bartlett's test for sphericity, conducting a factor analysis was appropriate for this data set.

Using the principal components analysis method, EFA was conducted on the RLSS data set. Principal components analysis is used to express the variance structure of the X variable set in many properties examined with new variables: k variables (k < p) and linear components of these variables instead of p original variables (Özdamar, 2004; Table 3).

The RLSS had two factors with eigenvalues greater than one. While the single-factor structure of the scale explained 49.21% of the total variance, the two-factor structure explained 70.25% of the total variance. There are criteria to determine the number of factors. The eigenvalue must be one or greater, the variance ratio explained should be two third of

the total variance, and the scree plot (Figure 1) should be evaluated (Büyüköztürk, 2002). When investigating the factor loadings of the RLSS (Table 3), only Item 2 ("If I could live my life over, I would change many things") was in Factor 2. Item 2 was reverse scored. The other items (Items 1, 3, 4, 5, and 6) were in Factor 1. In addition, a generalized least squares analysis was performed. According to this analysis, Items 1 (factor loading = 841), 3 (factor loading = 823), 4 (factor loading = 382), and 5 (factor loading = 712) were in Factor 1. Items 2 (factor loading = 440) and 6 (factor loading = 641) were in Factor 2. Boldfaced values in Table 3 indicated the acceptable values (Büyüköztürk, 2008). Items 2 and 6 were reverse scored. According to the factor analysis results, the direct and indirect question items were located under two different factors. Consequently, we decided it was more appropriate to use the one-factor structure.

An EFA was conducted to ensure the construct validity of the scale and to test what factor groups were highly correlated with what factor, whereas a confirmatory factor analysis (CFA) was conducted to determine whether variable groups contributing to a defined number of k were adequately represented by these factors (Aytaç & Öngen, 2012).

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				Eigenvalue		Extraction sums of squared loadings			
Factor	FI	F2	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)	
ī	.825	385	2.952	49.208	49.208	2.952	49.208	49.208	
2	.544	.598	1.263	21.045	70.253	1.263	21.045	70.253	
3	.815	396	0.731	12.185	82.438				
4	.515	.450	0.428	7.140	89.578				
5	.774	348	0.397	6.616	96.194				
6	.669	.526	0.228	3.806	100.000				

Table 3. The Results of the Exploratory Factor Analysis of the Riverside Life Satisfaction Scale (Factor Loadings and Eigenvalues).

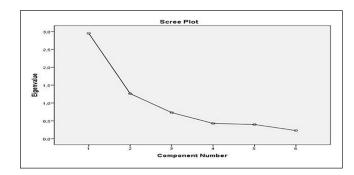


Figure 1. Scree plot of the RLSS. Note. RLSS = Riverside Life Satisfaction Scale.

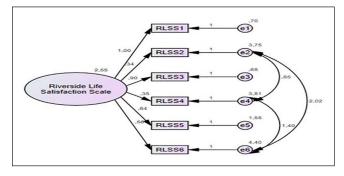


Figure 2. The results of the Riverside Life Satisfaction Scale path analysis.

The factor loadings of all items on the scale (Figure 2) were appropriate.

The chi-square value of the RLSS was 3.51, the χ^2/df value was 0.59, and the p value was not significant (p=.74). Accordingly, the scale was excellent fit (Table 4) to the data (Klein, 2005). The CFA yielded root mean square error of approximation and square root mean square values of 0.000 and 0.052, respectively, indicating an excellent and acceptable fit (Brown, 2006). The normed fit index and the goodness-of-fit index used to determine the fit of the putative model with the null hypothesis and take a value in the 0 to 1 interval, which was found to be 0.99, indicating that the model had an excellent fit (Erkorkmaz et al., 2013). Furthermore, the comparative fit index value was 1.00, indicating it was an excellent

Table 4. Goodness-of-Fit Indices of the Riverside Life Satisfaction Scale.

Goodness-of-fit indices	Value
${\chi^2}$	3.509
χ^2/df	0.585
Þ	0.743
Root mean square error of approximation	0.000
Standardized root mean squared residual	0.052
Normed fit index	0.997
Comparative fit index	1.000
Goodness-of-fit index	0.998
Adjusted goodness-of-fit index	0.992

fit (Tabachnick & Fidell, 2001). The goodness-of-fit index value was 0.99, and the adjusted goodness-of-fit was 0.99, which also indicated an excellent fit (Ayyıldız & Cengiz, 2006). In sum, the EFA and CFA revealed that the single-factor structure of the RLSS was a valid measurement tool.

Discussion

We investigated the psychometric properties and factor structure of the Turkish version of the RLSS and validated it by examining its correlations with the SWLS, BFI, PWBS-SF, and PANAS in a sample of Turkish adults.

As expected, the RLSS had a single-factor structure and it explained 49.21% of the total variance. This result was consistent with the study by Margolis et al. (2019), in which the single-factor structure of the scale explained 58% of the total variance—well above the recommended ≥30% value (Büyüköztürk, 2008). The EFA and CFA revealed that the goodness-of-fit values were excellent and the single-factor structure of the scale was a valid measurement tool.

In studies that examined the SWLS in Turkish culture, it was found that the scale had an acceptable single-factor structure (Durak et al., 2010; Yetim, 1991) and Cronbach's alpha, split-half reliability, and item-total correlations with the RLSS were all appropriate. Consistently, across a wide range of ages and samples, the psychometric properties of the SWLS were satisfactory: The SWLS was reliable, had high internal validity, and had a single-factor structure (Dağlı

& Baysal, 2016; Durak et al., 2010). In contrast, the SWLS does not include any reverse-scored items; however, the RLSS has three inverse items to diminish the measurement bias effect (Margolis et al., 2019). A comparison of the RLSS scores with the scores obtained from the SWLS yielded a strong, positive, and significant correlation. This result indicates that the RLSS is a valid and reliable alternative to the SWLS.

Furthermore, Korajlija et al. (2019) measured the LS of adults aged 18 to 72 years with single-item LS measurement ("How satisfied are you with your life overall?"). They found that this single item was a valid way to measure LS. However, single-item measurements are statistically criticized for being insufficient to catch overall LS and for their statistical problems (Margolis et al., 2019). Moreover, cross-cultural comparison of these studies is vital as varied measurements may cause conflicting results and may make it difficult to compare results (Yaremtchuk, 2014). Therefore, adapting scales to different languages and populations is important for cross-cultural studies. Also, Durak et al. (2010) stated that examining the results of different samples increased the generalizability and psychometric properties of the scale. As expected, the RLSS is a valid and reliable way to measure LS. Consistently, the current study revealed that the Turkish version of the RLSS is also a valid and reliable alternative to measure LS in adults aged 18 to 70 years.

Correlational analyses revealed that there were positive correlations between the RLSS and extraversion, agreeableness, and conscientiousness, whereas there was a strong negative correlation between neuroticism and the RLSS. These findings support those of other studies and that extraversion, neuroticism, and SWB are related constructs (Lucas, 2018). Most studies found that neuroticism scores and LS scores were negatively correlated. Accordingly, those who have negative emotions such as sadness, anger, and anxiety have significantly lower LS (Albuquerque et al., 2012; Margolis et al., 2019; Zhang, 2016). In contrast, extraversion, conscientiousness, and agreeableness are all positively correlated with LS (Albuquerque et al., 2012; Margolis et al., 2019; Zhang, 2016). Accordingly, those who are extrovert, energetic, reliable, compassionate, organized, and planners may have significantly higher LS than their counterparts.

Consistent with the literature, no relationship was found between LS and openness in this study. In literature, openness is considered to be unrelated to LS according to results. Because of that, openness is considered a less related personality trait to LS in the literature (e.g., Stephan, 2009). As expected, there was a positive correlation between the RLSS scores and PA scores and a negative correlation between NA scores and the RLSS scores. LS is positively associated with pleasant feelings like feeling proud, excited, and inspired (Berenbaum et al., 2013). In prior studies, PA was positively associated with LS (e.g., Durak et al., 2010; Zhang, 2016), whereas NA was negatively related to LS (Durak et al., 2010; Zhang, 2016).

Conclusion

The Turkish version of the RLSS was a valid and reliable way to measure LS among Turkish adults. It is an up-to-date, standard, and powerful alternative scale that is statistically strong, easy-to-apply, and free from measurement bias. The cross-cultural value of the current study is apparent.

Despite these strengths, this study had some limitations. First, the cross-sectional design limits our ability to infer causation. The measures were also all self-reported, which is another key limitation. Furthermore, a test—retest analysis to measure scale stability could not be performed. Nonetheless, we surveyed a large sample group with a varied age range.

Future studies should adapt the RLSS for other cultures, which will further its applicability. Mixed-research methods, such as cross-sectional and longitudinal studies, that examine additional variables and different samples should be conducted (Baird et al., 2010). In particular, the interactions between LS and openness could be examined in future studies.

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