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## **The Expressions of Spirituality Inventory – Revised (ESI-R): Psychometric Evaluation of the Slovene-Language Version**

*Abstract:* Our study aims to translate, adapt, and psychometrically evaluate the 30-item revised version of the Expressions of Spirituality Inventory-Revised (ESI-R) in the Slovene language. This inventory was developed to measure five dimensions of spirituality (cognitive orientation toward spirituality, experiential-phenomenological aspects, existential well-being, paranormal beliefs, and religiousness), which are constructs that can commonly be found throughout the literature on spirituality. The ESI-R was administered to a sample of 309 Slovene-speaking adults. Reliability analysis shows good inter-item consistency (Cronbach alpha) coefficients ranging from 0,804 to 0,924. Exploratory factor (principal component) analysis better supports four dimensions instead of five (two factors in the Slovene version are combined into a single one), a solution that is also suggested and supported in some literature on the ESI-R. Confirmatory factor analysis support both the five- and four-factor solutions, but the five-factor solution seems slightly superior. Furthermore, based on theoretical assumptions, the five-dimension solution is recommended. The psychometric properties of the translated version are similar to the original version and the majority of other translated versions, and support the use of the ESI-R as a promising instrument in Slovenia.

*Key words:* The Expressions of Spirituality Inventory, Spirituality, Psychometric Evaluation, Slovene-language version

*Povzetek:* **Revidiran Vprašalnik izrazov duhovnosti (VID-R): Psihometrično ovrednotenje slovenske različice**

Cilj naše raziskave je prevesti, prirediti in psihometrično ovrednotiti revidirano verzijo Vprašalnika izrazov duhovnosti (VID-R) s 30 postavkami v slovenščini. Vprašalnik izrazov duhovnosti je bil razvit z namenom merjenja petih dimenzij duhovnosti – konstruktov, ki jih običajno srečamo v literaturi o duhovnosti (kognitivna usmerjenost k duhovnosti, izkustveno-fenomenološki vidiki, eksistenčno blagostanje, paranormalna prepričanja in religioznost). V naši raziskavi je bil vprašalnik preverjen na vzorcu 309 slovensko govorečih odraslih. Analiza zanesljivosti je pokazala, da ima vprašalnik dobro notranjo skladnost, kar smo preverili s Cronbach alfa koeficientom zanesljivosti, ki se giblje med 0,804 in

0,924. Eksploratorna faktorjska analiza (analiza glavnih komponent) bolj podpira obstoj štirih faktorjev namesto petih (dva faktorja iz originalne različice se v slovenski različici združujeta v en faktor). O podobni podpori štirifaktorski rešitvi so poročali nekateri drugi raziskovalci tega vprašalnika. Konfirmatorna faktorjska analiza podpira tako štirifaktorsko kot petfaktorsko rešitev, pri čemer se zdi petfaktorska rešitev malenkost primernejša. Tudi na osnovi teoretičnih predpostavk se tako predlaga uporabo petfaktorske rešitve. Psihometrične značilnosti prevedene različice so podobne tako originalni različici, kakor tudi prevedenim različicam v drugih jezikih, in podpirajo nadaljnjo uporabo vprašalnika v slovenskem jezikovnem okolju.

*Ključne besede:* Vprašalnik izrazov duhovnosti, duhovnost, psihometrična evalvacija, slovenska različica vprašalnika

## 1. Introduction

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There are many definitions of spirituality, and almost no one seems to agree on what exactly spirituality is (MacDonald 2011, 195). Initially, it was connected with religiosity, but now it is generally considered as having a broader meaning, and usually also includes concepts like purpose and meaning in life, connectedness with others, peacefulness, harmony, and well-being (Malinakova et al. 2017, 698). Researchers often conceptualise spirituality as an individual's understanding, experience and connection with what goes beyond (transcends) the individual life (Eriksson and Yeh 2012, 55). Often authors link spirituality to the search for the sacred (for example Hulett and Armer 2016, 2). Bryant-Davis et al. (2012, 307) describe spirituality as the subjective experience of the sacred, emotional connection or relationship with God, or the sacred, or the transcendent, which goes beyond the self. Many authors differentiate spirituality and religiosity, although they can and usually do have some overlapping characteristics. Although the detailed description of the relationship between spirituality and religiosity is beyond the scope of this article, we can say that spirituality may be understood as searching for the sacred in the broadest sense, while religiosity may be understood as the search for sacredness within the context of a given faith or social system. (Gabrhel and Ježek 2017, 102) There appears to be a fairly broad agreement and accepted understanding that the search for sacred is a complex phenomenon with cognitive, experiential and other aspects and that spirituality is a multi-faceted concept (MacDonald et al. 2015).

Historically, spirituality has been considered to be a construct that is hard to study empirically, but in the previous three or four decades the growing interest of different disciplines (such as psychology, psychotherapy, social work, and counselling) in spirituality influenced on the huge development of research on spirituality (MacDonald 2011, 195). Many studies and authors connect spirituality with mental and physical health in specific conditions (for example George et al. 2000; Koenig, George and Peterson 1998; Koenig et al. 1999; Matthews et al. 1998;

Simonič and Rijavec Klobučar 2017; Cvetek 2017a; 2017b; Rijavec Klobučar 2016; Gostečnik et al. 2012; Bryant-Davis et al. 2012; Cvetek et al. 2018).

Different measures for studying spirituality have been developed. The Expressions of Spirituality Inventory (ESI), a 98-item self-report questionnaire, and the shorter 30-item version The Expressions of Spirituality Inventory-Revised (ESI-R) were developed in 2000 by MacDonald (2000a). The ESI measures an empirically derived multidimensional model of spirituality or, more accurately, expressions of spirituality. Since spirituality can be considered trans-verbal and trans-conceptual, it is hard to wholly comprehend spirituality through psychometric methods, but reliable behavioural, psychological, physiological, and social »expressions« may aid in studying spirituality. (2)

Besides availability and low costs, there are some other important reasons why this measure can be seen as a preferred instrumentalised model for measuring (expressions of) spirituality by some researchers (Muhamad, Roodenburg and Moore 2014, 59–60): the ESI encompasses a broad range of spirituality constructs as it is based on a meta-study of spirituality studies rather than one proponent's theory. The author conducted an extensive meta-analysis of available theoretical and empirical literature and identified the main aspects of spirituality (including experiential, cognitive, affective, physiological, behavioural, social, religious, mystical, transpersonal, and transcendent). The author applied factor analytic techniques across a representative sample of about 18 pre-existing scales of spirituality to obtain items in the ESI. ESI has sound reliability and excellent factorial, convergent, discriminate criterion, and predictive validity. On the basis of ESI theory, development can be supported (for example a structural model of spirituality and spiritual identity (MacDonald 2009) based upon EFI).

The original English-language ESI or its short version has already been translated and used in research in many countries, including India, Japan, Czech Republic, Poland, Peru, Spain, Malaysia, Slovakia, Canada, Korea, the United States, and Brazil (López, Jódar and MacDonald 2017; Silva et al. 2017; Gabrhel and Ježek 2017; Muhamad, Roodenburg and Moore 2014; Mendez and MacDonald 2017; Proyer and Laub 2017; MacDonald 2009; MacDonald et al. 2015). To the best of our knowledge, there is also a lack of psychometrically validated measures of spirituality in the Slovene language.

The ESI and ESI-R have five dimensions (MacDonald 2000a, 5; Mendez and MacDonald 2017, 124). The first is called »Cognitive orientation toward spirituality« and measures the perceptual and cognitive aspects of spirituality, namely faith (or beliefs), perceptions and attitudes towards spirituality, and the importance of spirituality in one's daily life. This dimension does not involve religiousness, although it does appear to be related to it. The »Experiential/phenomenological dimension« measures experience described as spiritual, religious, mystical, peak, transcendental, and transpersonal. The next dimension, »Existential well-being«, pertains to spirituality as expressed through a sense of meaning and purpose in one's life, the perception of the self as capable of coping with the difficulties of

life and the limitations of human existence. The dimension called »Paranormal beliefs« measures beliefs in phenomena, such as telepathy, ghosts, witchcraft, or the protective powers of amulets. The last dimension, »Religiousness«, measures beliefs, attitudes, and behavioural and lifestyle practices associated with devout religious commitment, particularly as understood and manifested within a Judeo-Christian context, focusing more on intrinsic as opposed to extrinsic religiousness. (MacDonald 2000a, 5; Mendez and MacDonald 2017, 124)

## 2. Method

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### 2.1 Participants

The sample for the study consisted of 309 volunteering participants, 195 women and 114 men, with a mean age of 41,31 years and standard deviation of 15,23, ranging from 20 to 87 years. All participants were residents of Slovenia who were proficient in the Slovene language.

Regarding the marital status, roughly a third of the sample reported being married (N=104, 33,66%), 85 (27,51%) participants were single, 49 (15,86%) participants were living together but not married, 47 (15,21%) were in partnership but not living together, 18 (5,83%) were divorced, 3 (0,97%) were widowed and 3 (0,97%) participants did not provide information about their marital status.

Most participants (97, 31,4%) reported having a university degree, second Bologna degree or equivalent, 96 (31,1%) first Bologna degree or equivalent, 68 (22%) had completed secondary school, 23 (7,4%) had primary school or vocational school, 17 (5,5%) had a specialisation or master of science degree, 7 (2,3%) had doctorates, and 3 participants did not report about their education.

The majority of participant were Catholics (N=195, 63,11%), 49 (15,86%) reported they do not identify with any religion, but they believe in »something more«; 28 (9,06%) were declared as atheists, 17 (5,5) were Muslims, 9 (2,91%) were Protestants, 10 (3,24%) reported something else and 1 did not answer.

### 2.2 Measures

The revised Expressions of Spirituality Inventory (ESI-R) (MacDonald 2000a) was used in the study. The ESI-R is a self-report questionnaire that consists of 30 items (plus one item assessing face validity – respondent's perception of the test as being a valid measure of spirituality and one item measuring the honesty of responding) and measures an empirically derived five-dimensional model of spirituality, developed by MacDonald (2000b, 187–191). Participants answer each item on five-point response scale from »strongly disagree« to »strongly agree«. As described in the introduction, the dimensions are Cognitive Orientation toward Spirituality, Experiential/Phenomenological Dimension, Existential Well-Being, Paranormal Beliefs, and Religiousness. Studies in different cultural samples provide su-

port for the good psychometric characteristics of ESI-R (Muhamad, Roodenburg and Moore 2014; MacDonald et al. 2015; Proyer and Laub 2017; Silva et al. 2017; López, Jódar and MacDonald 2017; Gabrhel and Ježek 2017; Mendez and MacDonald 2017).

The translation process in the Slovene language mainly followed the translation process of the ESI-R into the Spanish language (Mendez and MacDonald 2017), but included some other additional processes that were used in other translations of the ESI-R (Muhamad, Roodenburg and Moore 2014; Proyer and Laub 2017; Silva et al. 2017; López, Jódar and MacDonald 2017; Gabrhel and Ježek 2017). The approval from the original author of the ESI-R was obtained to translate and adapt the scale to the Slovene language. The English version of the ESI-R was independently translated into the Slovene language by three translators proficient in both English and Slovene. Three versions were compared by the translators and inconsistencies in their translations were discussed; consensus was reached for all items. Followed by some processes in the translation and adaptation method of Proyer and Laub (2017), Gabrhel and Ježek (2017) and Silva et al. (2017), this version was pretested; it was used and analysed by students in postgraduate course in research methods in marital and family studies at the University of Ljubljana. Students voluntarily administered it for testing through their social networks to 38 participants (28 women and 10 men, age ranged from 20 to 46). The data were used to show some basic psychometric analyses based on the collected data, and to evaluate the understanding, comprehensibility, and suitability of the items. Based upon feedback, some minor aspects of the translated version were modified to best ensure that the questionnaire was well adapted for use within a Slovene cultural context. Then a native English-speaking translator, who had not seen the original English version, translated the Slovene version of the ESI-R back into the English language (back-translation). The native speaker, researchers and translators compared the original version and the back-translated version about the similarity in language and meaning, some minor differences were again discussed leading to the final version of the translation. The translated version can be found in the Appendix.

### **2.3 Procedure**

Once translated, the ESI-R along with a short demographic questionnaire were administered to volunteer participants recruited online through social networks by the authors and some of the students from the pre-testing procedure of this study via the online survey tool 1ka (a similar procedure was also used in the process of translation and adaptation in Brazil (Silva et al. 2017) and German (Proyer and Laub 2017)). The online data collecting method has been criticised, but there is strong empirical evidence suggesting that results from these data are consistent with findings from traditional methods (Gosling et al. 2004, 93; Proyer and Laub 2017, 5). The results were analysed using SPSS (version 20) and AMOS (version 25).

### 3. Results

#### 3.1 Descriptive and Reliability Statistics

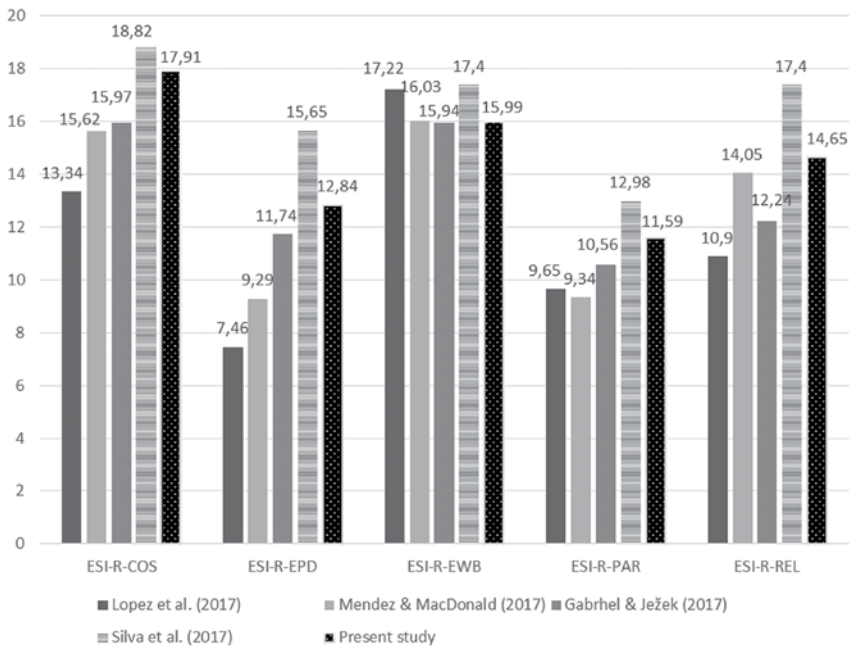
Means, standard deviations, minimums, maximums, and Cronbach alpha reliability coefficients are presented in Table 1. All Cronbach alpha coefficients reflect satisfactory (some even excellent) reliability.

**Table 1:** Descriptive and Reliability Statistics for the ESI-R

	M	Md	SD	Min.	Max.	Cronbach Alpha
ESI-R-COS	17,91	19,00	5,36	0,00	24,00	0,924
ESI-R-EPD	12,84	13,00	6,35	0,00	24,00	0,896
ESI-R-EWB	15,99	17,00	3,48	0,00	24,00	0,804
ESI-R-PAR	11,59	12,00	5,24	0,00	24,00	0,824
ESI-R-REL	14,65	16,00	6,34	0,00	24,00	0,902

*Note.* N=309. M – arithmetic mean. Md – median. Min. – minimum. Max. – maximum. ESI-R-COS – ESI-R Cognitive Orientation toward Spirituality dimension. ESI-R-EPD – ESI-R Experiential/Phenomenological dimension. ESI-R-EXB – Existential Well-Being dimension. ESI-R-PAR – ESI-R Paranormal Beliefs dimension. ESI-R-REL – ESI-R Religiousness dimension.

Figure 1 presents comparisons of obtained arithmetic means for ESI-R dimensions of the present study with some other studies of ESI-R in other countries.



**Figure 1:** Arithmetic means of ESI-R dimensions in different countries compared with present study. ESI-R-COS – ESI-R Cognitive Orientation toward Spirituality dimension. ESI-R-EPD – ESI-R Experiential/Phenomenological dimension. ESI-R-EXB - Existential Well-Being dimension. ESI-R-PAR – ESI-R Paranormal Beliefs dimension. ESI-R-REL – ESI-R Religiousness dimension.

As a next step, an exploratory factor analysis with principal component analyses was calculated. First, we checked Kaiser Meyer-Olkin Measure of Sampling Adequacy, and the results showed that the adequacy of the sample was excellent (0,941). We also performed Bartlett's test of sphericity, and the test was significant (sig. = 0,000). Based on these results, we proceed with calculating factor analysis, and we used the principal axis factor to extract five factors, described in the original literature. These factors were then orthogonally (varimax) rotated (also used by Lopez et al. 2017) to facilitate interpretation. Since both numerical (using statistical extraction rule for eigenvalue to be at least 1, the last extracted factor was 0,892, i.e. below 1) and graphical (scree plot) examination of initial eigenvalues led to the conclusion that it is also reasonable to check the extraction and rotation of four factors (the fifth factor explained 2,97 of variance in the initial version and 6,74% of variance in rotated version), we ran a second principal axis factor analysis and set it to extract factors that exceed eigenvalue 1, resulting in extraction of four factors. This was also done in accordance with some other translations and adaptations processes that also used four factors solution (López, Jódar and MacDonald 2017) and also with findings, that MacDonald et al. (2015, 20–24) reported for multiple cultural samples, namely that two dimensions ESI-R-COS and ESI-R-REL seem to be significantly correlated and thus may be better represented in the model as one factor. The rotated factor loading matrices for both five and four factors solutions are presented in Table 2. The five-factor solution accounted for a total of 65,6% of score variance, and the four-factor solution accounted for a total of 62,63% of score variance. The loadings of the COS items ranged between 0,70 and 0,80. There were no significant secondary loadings that would exceed 0,40.

**Table 2:** *Principal axis factor analysis results: Varimax rotated factor loadings for five and four factors solution*

ESI-R Item	Rotated Component Matrix - five factors solution					Rotated Component Matrix - four factors solution			
	Factor					Factor			
	1	2	3	4	5	1	2	3	4
COS1	<b>0,70</b>	0,31	0,16	0,00	0,02	<b>0,70</b>	0,31	0,16	0,01
COS6	<b>0,75</b>	0,25	0,18	-0,13	0,04	<b>0,75</b>	0,25	0,18	-0,06
COS11	<b>0,75</b>	0,35	0,22	0,00	0,07	<b>0,75</b>	0,35	0,22	0,05
COS16	<b>0,73</b>	0,28	0,15	0,02	0,12	<b>0,72</b>	0,28	0,15	0,10
COS21	<b>0,80</b>	0,26	0,26	-0,02	-0,04	<b>0,80</b>	0,26	0,26	-0,03
COS26	<b>0,73</b>	0,21	0,20	-0,12	0,03	<b>0,73</b>	0,21	0,20	-0,07
EPD2	0,32	<b>0,70</b>	0,08	-0,10	0,14	0,32	<b>0,71</b>	0,09	0,02
EPD7	0,23	<b>0,78</b>	0,23	-0,04	-0,04	0,23	<b>0,78</b>	0,23	-0,05
EPD12	0,28	<b>0,71</b>	0,35	0,09	0,04	0,28	<b>0,71</b>	0,35	0,10
EPD17	0,36	<b>0,73</b>	0,26	0,09	0,04	0,36	<b>0,72</b>	0,26	0,10
EPD22	<b>0,55</b>	<b>0,61</b>	0,10	0,11	0,00	<b>0,55</b>	<b>0,61</b>	0,10	0,09
EPD27	0,36	<b>0,69</b>	0,28	-0,06	0,03	0,36	<b>0,69</b>	0,28	-0,02

EWB3	0,08	0,07	0,03	0,33	<b>0,79</b>	0,09	0,09	0,03	<b>0,78</b>
EWB8	0,07	0,05	0,05	0,17	<b>0,85</b>	0,07	0,07	0,04	<b>0,70</b>
EWB13	0,07	0,02	0,00	<b>0,46</b>	<b>0,70</b>	0,07	0,03	0,00	<b>0,82</b>
EWB18	-0,11	-0,05	0,08	<b>0,70</b>	0,26	-0,11	-0,07	0,09	<b>0,69</b>
EWB23	0,00	-0,03	0,00	<b>0,81</b>	0,17	-0,01	-0,06	0,01	<b>0,70</b>
EWB28	0,08	0,08	-0,04	<b>0,67</b>	0,19	0,08	0,06	-0,04	<b>0,62</b>
PAR4	0,27	0,20	<b>0,70</b>	0,14	-0,02	0,26	0,19	<b>0,70</b>	0,09
PAR9	0,13	0,26	<b>0,68</b>	0,00	-0,05	0,13	0,26	<b>0,68</b>	-0,03
PAR14	0,06	-0,04	<b>0,78</b>	-0,02	0,03	0,06	-0,04	<b>0,78</b>	0,01
PAR19	0,39	0,18	<b>0,54</b>	0,09	-0,03	0,39	0,17	<b>0,54</b>	0,05
PAR24	0,01	0,28	<b>0,68</b>	-0,03	0,09	0,01	0,28	<b>0,68</b>	0,05
PAR29	0,13	0,19	<b>0,73</b>	-0,07	0,07	0,13	0,20	<b>0,73</b>	0,00
REL5	<b>0,79</b>	0,06	-0,11	0,12	0,04	<b>0,79</b>	0,06	-0,11	0,11
REL10	<b>0,60</b>	<b>0,49</b>	0,30	0,07	0,03	<b>0,60</b>	<b>0,49</b>	0,30	0,07
REL15	<b>0,79</b>	0,13	0,01	0,18	0,02	<b>0,78</b>	0,13	0,01	0,14
REL20	<b>0,80</b>	0,27	0,06	0,00	0,07	<b>0,80</b>	0,28	0,06	0,05
REL25	<b>0,81</b>	0,23	0,16	0,01	0,05	<b>0,81</b>	0,24	0,17	0,05
REL30	<b>0,77</b>	0,04	0,14	-0,08	0,03	<b>0,77</b>	0,04	0,14	-0,04

Note. Factor loadings 0,40 or higher are indicated in bold. For ESI-R items acronym indicates dimension/subscale (COS – Cognitive orientation toward spirituality dimension; EPD – Experiential/Phenomenological dimension; EXB – Existential Well-Being dimension; PAR – Paranormal Beliefs dimension; REL – Religiousness dimension) and number indicates item number on questionnaire.

The loadings for EPD items ranged from 0,61 to 0,78. Item EPD22 («I have had an experience in which all things seemed divine») was also, importantly, secondary loaded (differences with primary loadings 0,06) on the factor capturing cognitive orientation and religiousness items in both four and five-factor solutions. PAR items showed loadings from 0,54 to 0,78 and no important secondary loadings. The loadings of REL items ranged between 0,60 and 0,81, item REL10 («I feel a sense of closeness to a higher power») in both four and five-factor solutions had important (0,49) secondary loading on factor capturing experiential/phenomenological items. EWB items in the four-factor solution ranged from 0,62 to 0,82 and had no important secondary loadings. However, in the five-factor solution, the EWB items' primary loadings were split between fourth (EWB18, EWB23 and EWB28) and fifth (EWB3, EWB8 and EWB13) factor, with EWB13 also having important secondary loading (0,46) on the fourth factor.

Similar to the analytic method of MacDonald et al. (2015), after the exploratory factor analysis, confirmatory factor analysis using the maximum likelihood factor to test the goodness of fit was calculated. Due to the reasons described in the previous section, we tested both the five- and four-factor models. In contrast to the five-factor model, the four-factor model predicted the COS and REL dimensions as one single factor. In both calculations, all factors were permitted to correlate. Table 3 presents the standardised factor loadings and fit statistics for the two models tested (i.e. correlated four-factor and correlated five-factor).



**Table 3:** *Standardised regression weights and model fit statistics - results of Confirmatory Factor Analytic Test for correlated five and correlated four-factor models.*

ESI-R Item	Correlated Five Factor Model					Correlated Four Factor Model			
	Factor					Factor			
	COS	EPD	EWB	PAR	REL	COS/ REL	EPD	EWB	PAR
COS1	0,785	---	---	---	---	0,778	---	---	---
COS6	0,815	---	---	---	---	0,803	---	---	---
COS11	0,872	---	---	---	---	0,862	---	---	---
COS16	0,783	---	---	---	---	0,785	---	---	---
COS21	0,886	---	---	---	---	0,875	---	---	---
COS26	0,791	---	---	---	---	0,78	---	---	---
REL5	---	---	---	---	0,721	0,684	---	---	---
REL10	---	---	---	---	0,765	0,77	---	---	---
REL15	---	---	---	---	0,771	0,736	---	---	---
REL20	---	---	---	---	0,844	0,819	---	---	---
REL25	---	---	---	---	0,848	0,837	---	---	---
REL30	---	---	---	---	0,702	0,682	---	---	---
EPD2	---	0,697	---	---	---	---	0,698	---	---
EPD7	---	0,773	---	---	---	---	0,773	---	---
EPD12	---	0,795	---	---	---	---	0,795	---	---
EPD17	---	0,831	---	---	---	---	0,831	---	---
EPD22	---	0,792	---	---	---	---	0,792	---	---
EPD27	---	0,792	---	---	---	---	0,792	---	---
EWB3	---	---	0,761	---	---	---	---	0,762	---
EWB8	---	---	0,682	---	---	---	---	0,681	---
EWB13	---	---	0,801	---	---	---	---	0,801	---
EWB18	---	---	0,572	---	---	---	---	0,574	---
EWB23	---	---	0,552	---	---	---	---	0,55	---
EWB28	---	---	0,509	---	---	---	---	0,508	---
PAR4	---	---	---	0,747	---	---	---	---	0,745
PAR9	---	---	---	0,69	---	---	---	---	0,694
PAR14	---	---	---	0,589	---	---	---	---	0,586
PAR19	---	---	---	0,624	---	---	---	---	0,625
PAR24	---	---	---	0,626	---	---	---	---	0,629
PAR29	---	---	---	0,692	---	---	---	---	0,69
<b>Model fit indices</b>	$\chi^2 = 848,57$ , $df = 395$ , $\chi^2/df = 2,148$ , $p < ,001$ , CFI = ,919, TLI = ,904, RMSEA = ,061					$\chi^2 = 903,16$ , $df = 395$ , $\chi^2/df = 2,263$ , $p < ,001$ , CFI = ,91, TLI = ,895, RMSEA = ,064			

Note. For ESI-R items acronym indicates dimension/subscale (COS – Cognitive orientation toward spirituality dimension; EPD – Experiential/Phenomenological dimension; EXB – Existential Well-Being dimension; PAR – Paranormal Beliefs dimension; REL – Religiousness dimension) and number indicates item number on Slovene adaptation of the questionnaire. For both models, all factor loadings and error variances significant at  $p < ,001$ .

The results indicate that both four and five-factor models are adequate. Although chi-square is statistically significant, other indices of model fit are reasonably

satisfactory (though not excellent), and they indicate that both models appear to find support. They comply with the criteria for adequate fit (López, Jódar and MacDonald 2017, 1115); both Comparative Fit Indexes are slightly above the criterion (0,90 and above (Holmes-Smith 2011)), the Root Mean Square Errors of Approximation (RMSEAs) are below 0,08 (lower values indicate better fit, 0,08 is generally viewed as providing evidence of adequate fit (Byrne 2010, 80–81)). The Tucker-Lewis Index produces value above 0,90 for the five-factor model and slightly below for the four-factor model. Although the differences between two models are small, the five-factor model seems to fit a little better, also if we take into consideration the value (848,57 vs 903,16) of chi-square (lower value is superior).

In Table 4, factor correlations are presented.

**Table 4:** *Factor correlations - results of Confirmatory Factor Analytic Test for correlated five and correlated four-factor models.*

ESI-R Item	Correlated Five Factor Model					Correlated Four Factor Model			
	Factor					Factor			
	COS	EPD	EWB	PAR	REL	COS/REL	EPD	EWB	PAR
EPD	0,767					0,771			
EWB	0,091	0,119				0,120	0,119		
PAR	0,559	0,655	0,077			0,533	0,656	0,076	
REL	0,939	0,740	0,157	0,467		---	---	---	---

Note. For ESI-R items acronym indicates dimension/subscale (COS – Cognitive orientation toward spirituality dimension; EPD – Experiential/Phenomenological dimension; EXB – Existential Well-Being dimension; PAR – Paranormal Beliefs dimension; REL – Religiousness dimension).

In line with results in some other countries (Gabrhel and Ježek 2017, 105; Silva et al. 2017, 138; López, Jódar and MacDonald 2017, 115), the estimated correlations between the five latent factors showed small correlation between EWB and other factors (this dimension seems to be poorly related to other dimensions), and very strong correlation between COS and REL (0,939). Correlations are strong between COS (or COS/REL) and EPD, COS (or COS/REL) and PAR, as well as between EPD and PAR.

### 3.2 Discussion

In Slovenia, there is a lack of measures of spiritual constructs that have been translated, adapted, and psychometrically evaluated so that they could be used for research and other purposes. Our study evaluated one such questionnaire: the Expressions of Spirituality Inventory-Revised. The results of our study provide strong support for the psychometric properties of our adaptation of the ESI-R. We found some excellent and satisfactory reliability (Cronbach alpha) of the ESI-R dimensions. Measures of reliability and also other psychometric characteristics (e.g. arithmetic means of dimensions) are consistent with the majority of published

research of ESI-R in different cultures (MacDonald et al. 2015; Gabrhel and Ježek 2017; Silva et al. 2017; Muhamad, Roodenburg and Moore 2014; López, Jódar and MacDonald 2017; Proyer and Laub 2017).

Furthermore, Exploratory and Confirmatory Factor Analysis gave supportive results and are, in general, consistent with previous research of the ESI-R. We found even some significant secondary loadings of specific items consistent with other studies (e.g. REL10 in our study and in the study of Gabrhel and Ježek (2017)). Although exploratory factor analysis finds better support for the four-factor model, the confirmatory factor analysis is more supportive of the five-factor model and consistent with findings of MacDonald et al. (2015, 20–24) in their analysis of the quality of model fit for the four- and five-factor models with multiple cultural samples. One possible influence that probably also contributed to such strong correlation between COS and REL dimensions is the fact that our sample in the study was mainly religious: 63,11% of respondents identified themselves as Catholics and only 9,06% as atheists. Although we find our sample of similar quality as other studies of ESI-R in other countries (López, Jódar and MacDonald 2017, 113; Silva et al. 2017, 135), we need to stress that our sample may not be entirely representative of the whole Slovene population and that this fact may have contributed to the limitation of this study. Future studies should be done with larger and more diverse Slovene samples (e.g. comparing atheist and religious samples) to replicate and extend upon our results.

The results also show that some items could be assigned to more than one factor, but the inclusions of such items in dimension should also have a theoretical base (in addition to a stronger empirical one).

Similar as some other researchers of ESI-R (Silva et al. 2017; MacDonald et al. 2015; Proyer and Laub 2017; Muhamad, Roodenburg and Moore 2014), based upon results of this study, especially Confirmatory Factor Analysis, taking into account mainly religious nature of our sample (majority of participants identified themselves with organised religions) and theoretical considerations, we support the standard scoring of the ESI-R with five dimensions and the use of our translated version of the ESI-R as a promising instrument for research and other use in Slovenia. Future usage of the Slovene version of ESI-R (similar for example of the German version of the ESI-R (Proyer and Laub 2017, 11)) should also provide more evidence that the overlapping COS and REL dimensions can predict different outcomes and also have practical (besides theoretical) value.

## References

- Bryant-Davis, Thema, Monica U. Ellis, Elizabeth Burke-Maynard, Nathan Moon, Pamela A. Counts, and Gera Anderson.** 2012. Religiosity, Spirituality, and Trauma Recovery in the Lives of Children and Adolescents. *Professional Psychology-Research and Practice* 43, no. 4:306–314.
- Byrne, Barbara M.** 2010. *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*. New York: Routledge and Taylor & Francis Group.
- Cvetek, Mateja.** 2017a. Children's Comprehension of the Religious Story Affected by their Emotional Capacities. In: *Challenges to Religious Education in Contemporary Society*, 249–261. Eds. Jadranka Garmaz and Alojzije Čondić. Split: Crkva u svijetu.
- Cvetek, Robert.** 2017b. The Role of Traumatic Events in Experiencing Faith, Spirituality and Existential Questions. In: *Challenges to Religious Education in Contemporary Society*, 294–318. Eds. Jadranka Garmaz and Alojzije Čondić. Split: Crkva u svijetu.
- Cvetek, Robert, Christian Gostečnik, Tanja Pate, Barbara Simonič, Tanja Valenta, and Tanja Repič Slavič.** 2018. Spirituality and Psycho-Organic Regulation. *The Person and the Challenges* 8, no. 2:147–166.
- Eriksson, Cynthia B., and Dow-Ann Yeh.** 2012. Grounded Transcendence: Resilience to Trauma through Spirituality and Religion. In: *Individual Trauma: Recovering from Deep Wounds and Exploring the Potential for Renewal*, 53–72. Ed. Kathryn Gow and Marek J. Celinski. New York: Nova Science Publishers.
- Gabrhel, Vit, and Stanislav Ježek.** 2017. Factor Validity and Internal Consistency of the Expressions of Spirituality Inventory – Revised (ESI-R): The Czech Context. *International Journal of Transpersonal Studies* 36, no. 1:101–109.
- George, Linda K., David B. Larson, Harold G. Koenig, and Michael E. McCullough.** 2000. Spirituality and Health: What we Know, What we Need to Know. *Journal of Social and Clinical Psychology* 19:102–116.
- Gosling, Samuel D., Simine Vazire, Sanjay Srivastava, and Oliver P. John.** 2004. Should we Trust Web-Based Studies? A Comparative Analysis of Six Preconceptions about Internet Questionnaires. *American Psychologist* 59, no. 2:93–104.
- Gostečnik, Christian, Mateja Cvetek, Saša Poljak, Tanja Repič, and Robert Cvetek.** 2012. Religion and Addiction. *Journal of Religion and Health* 51, no. 4:1165–1171.
- Holmes-Smith, Philip.** 2011. Advanced Structural Equation Modelling Using AMOS. Workshop Material Provided at the ACSPRI 2011 Spring Program. Melbourne: School Research Evaluation and Measurement Services.
- Hulett, Jennifer M., and Jane M. Armer.** 2016. A Systematic Review of Spiritually Based Interventions and Psychoneuroimmunological Outcomes in Breast Cancer Survivorship. *Integrative Cancer Therapies* 15, no. 4:405–423.
- Koenig, Harold G., Linda K. George, and Bercedis L. Peterson.** 1998. Religiosity and Remission from Depression in Medically Ill Older Patients. *American Journal of Psychiatry* 155, no. 4:536–542.
- Koenig, Harold G., Ellen Idler, Stanislav Kasl, Judith C. Hays, Linda K. George, Marc Musick, David B. Larson, Terence R. Collins, and Herbert Benson.** 1999. Religion, Spirituality, and Medicine: A Rebuttal to Skeptics. *International Journal of Psychiatry in Medicine* 29, no. 2:123–131.
- López, Elena, Rafael Jódar, and Douglas A. MacDonald.** 2017. Psychometric Properties of a Spanish Adaptation of the Expressions of Spirituality Inventory – Revised (ESI-R). *International Journal of Transpersonal Studies* 36, no. 1:110–121.
- MacDonald, Douglas A.** 2011. Studying Spirituality Scientifically: Reflections, Considerations, Recommendations. *Journal of Management, Spirituality & Religion* 8, no. 3:195–210.
- . 2009. Identity and Spirituality: Conventional and Transpersonal Perspectives. *International Journal of Transpersonal Studies* 28, no. 1:86–106.
- . 2000a. The Expressions of Spirituality Inventory: Test development, Validation and Scoring Information. Unpublished Test Manual. Michigan: University of Detroit Mercy.
- . 2000b. Spirituality: Description, Measurement, and Relation to the Five Factor Model of Personality. *Journal of Personality* 68, no. 1:153–197.
- MacDonald, Douglas A., Harris L. Friedman, Jacek Brewczynski, Daniel Holland, Kiran Kumar K. Salagame, K. Krishna Mohan, Zuzana Ondriashova Gubrij, and Hye Wook Cheong.** 2015. Spirituality as a Scientific Construct: Testing its Universality across Cultures and Languages. *PLoS ONE* 10, no. 3:e0117701.
- Malinakova, Klara, Jaroslava Kopcakova, Peter Kolarcik, Andrea Madarasova Geckova, Iva Polackova Solcova, Vit Husek, Lucie Kluzova Kracmarova, Eva Dubovska, Michal Kalman, Zuzana Puzova, Jitse P. van Dijk, and Peter**

- Tavel.** 2017. The Spiritual Well-Being Scale: Psychometric Evaluation of the Shortened Version in Czech Adolescents. *Journal of Religion and Health* 56, no. 2:697–705.
- Matthews, Dale A., Michael E. McCullough, David B. Larson, Harold G. Koenig, James P. Swyers, and Mary Greenwald.** 1998. Religious Commitment and Health Status. A Review of the Research and Implications for Family Medicine. *Archive for Family and Medicine* 7, no. 2:118–124.
- Mendez, Diana M., and Douglas A. MacDonald.** 2017. The Measurement of Spirituality in Children: An Evaluation of the Expressions of Spirituality Inventory – Revised (ESI-R) with a Sample of Peruvian School Children. *International Journal of Transpersonal Studies* 36, no. 1:122–136.
- Muhamad, Haslina, John Roodenburg, and Dennis W. Moore.** 2014. The Expressions of Spirituality Inventory: Evidence for the Cross Cultural Validity in a Malaysian Context. *Journal of Transpersonal Psychology* 46, no. 1:58–71.
- Proyer, René T., and Nadine Laub.** 2017. The German-Language Version of the Expressions of Spirituality Inventory-Revised: Adaptation and Initial Validation. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues* 36, no. 1:1–13.
- Rijavec Klobučar, Nataša.** 2016. The Role of Spirituality in Transition to Parenthood: Qualitative Research using Transformative Learning Theory. *Journal of Religion and Health* 55, no. 4:1345–1358.
- Silva, Leonardo Xavier de Lima, Douglas A. MacDonald, Djailton Pereira da Cunha, and Aurino Lima Ferreira.** 2017. Psychometric Examination of a Brazilian Adaptation of the Expressions of Spirituality Inventory – Revised. *Estudos de Psicologia* 22, no. 2:132–143.
- Simonič, Barbara, and Nataša Rijavec Klobučar.** 2017. Experiencing Positive Religious Coping in the Process of Divorce: A Qualitative Study. *Journal of Religion and Health* 56, no. 5:1644–1654.

## Appendix

The Slovene-language version of the ESI-R:

1. Duhovnost je pomemben del mene kot osebe.
2. Imel/-a sem izkušnjo, v kateri sem imel/-a občutek globoke povezanosti z vsem.
3. Vedno se zdi, da stvari počnem narobe.
4. Z mrtvimi je mogoče komunicirati.
5. Verjamem, da se je pomembno udeleževati verskih obredov.
6. Duhovnost je bistven del človekovega bivanja.
7. Imel/-a sem izkušnjo, ko se mi je zdelo, da sem presegel/-la prostor in čas.
8. S samim/samo seboj mi ni prijetno.
9. Verjamem, da je čarovništvo resnično.
10. Imam občutek bližine z višjo silo.
11. Zaradi duhovnosti se bolje zavedam svojih življenjskih izbir.
12. Imel/-a sem mistično izkušnjo.
13. Večino stvari v življenju počnem prisiljeno.
14. Prihodnost je mogoče napovedati.
15. Dojemam se kot religiozno usmerjeno osebo.
16. Preden sprejem odločitev, skušam upoštevati vse elemente problema, vključno z duhovnim vidikom.
17. Imel/-a sem izkušnjo, v kateri se mi je zdelo, da sem se zliil/-a z višjo silo ali močjo, večjo od sebe.
18. Moje življenje je pogosto težavno.
19. Ne verjamem v duhove.
20. V vsem, kar počnem, vidim navzočnost Boga ali višje sile.

21. Moja duhovnost je koristila mojemu življenju.
22. Imel/-a sem izkušnjo, v kateri so se mi vse stvari zdele božje (božanske).
23. Pogosto občutim napetost.
24. Mislim, da je psihokineza ali premikanje predmetov z umom mogoče.
25. Prakticiram neko obliko molitve.
26. Verjamem, da je pomembno posvetiti pozornost duhovni rasti.
27. Imel/-a sem izkušnjo, v kateri se mi je zdelo, da presegam vsakdanje občutenje samega/same sebe.
28. Sem nesrečen človek.
29. Mogoče je zapustiti svoje telo.
30. Verjamem, da je Bog oziroma višja sila odgovorna za moje bivanje.
31. Zdi se mi, da ta vprašalnik meri duhovnost.
32. Na vse trditve sem odgovoril/-a iskreno.