

# Construct-Related Validity of the Emotional Skills and Competence Questionnaire - Children's Form (ESCQ-C)

---

**Mohorić, Tamara**

*Source / Izvornik:* **Psihologijske teme, 2020, 29, 151 - 166**

**Journal article, Published version**

**Rad u časopisu, Objavljena verzija rada (izdavačev PDF)**

<https://doi.org/10.31820/pt.29.1.9>

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:186:463217>

*Rights / Prava:* [In copyright](#) / [Zaštićeno autorskim pravom.](#)

*Download date / Datum preuzimanja:* **2024-12-02**



*Repository / Repozitorij:*

[Repository of the University of Rijeka, Faculty of Humanities and Social Sciences - FHSSRI Repository](#)



## Construct-Related Validity of the Emotional Skills and Competence Questionnaire – Children’s Form (ESCQ-C)

Tamara Mohorić

University of Rijeka, Faculty of Humanities and Social Sciences,  
Department of Psychology, Rijeka, Croatia

---

### Abstract

Social and emotional skills have an important role in children’s general functioning and social relationships (e.g., with peers, and family). Questionnaires measuring these competencies should be carefully developed and validated and be in accordance with the developmental stage of children. *The Emotional Skills and Competence Questionnaire – Children’s form (ESCQ-C)* is a self-report measure of one’s ability to perceive and understand emotions, to express and label emotions, and to manage and regulate emotions. It was developed within the theoretical framework from the Mayer and Salovey (1997) emotional intelligence model. Structural validity of the ESCQ-C was assessed in a sample of preadolescent children ( $N = 639$ , 53% girls,  $M_{\text{age}} = 11.24$ ,  $SD_{\text{age}} = 0.71$ ), and convergent validity was tested by correlating ESCQ-C subscales scores with the social, emotional and academic self-efficacy (*The Self-Efficacy Questionnaire for Children*, Muris, 2001). Our results suggest the four-factor structure for the ESCQ-C. Manage and regulate emotions subscale was divided into two subscales: the self-perceived ability to regulate one’s own emotions and other’s emotions. Correlations with the self-efficacy scales were moderate, suggesting good convergent validity. The ESCQ-C can be considered a valid measure of the emotional skills and competences for children.

*Keywords:* emotional skills, emotional competencies, ESCQ-C, self-efficacy

---

### Introduction

Students with good social and emotional (SE) competencies are more accepted by their peers, have more positive attitudes towards school, are more involved in learning, and receive more positive comments from their teachers (Raver & Knitzer,

---

✉ Tamara Mohorić, Department of Psychology, Faculty of Humanities and Social Sciences, University of Rijeka, Sveučilišna avenija 4, 51000 Rijeka, Croatia. E-mail: [tmohoric@ffri.hr](mailto:tmohoric@ffri.hr)

#### *Acknowledgment:*

This paper has been fully supported by the University of Rijeka under the project number: uniri-drustv-18-28.

2002). Therefore, assessing students' SE competencies is extremely important to identify students who need additional help and support in developing these skills. Because problems in the domain of emotional and social skills present a risk for the development of emotional and behavioural problems in the future (Takšić & Smojver-Ažić, 2016), early identification of risks can result in timely preventive procedures aimed at maintaining the mental health of children and young people. By applying valid and reliable measures, we can monitor socio-emotional development, and detect children who are not progressing as expected or who exhibit certain deviations from most of their peers (Ysseldyke, Burns, Scholin, & Parker, 2010). Given that students with emotional and behavioural problems have poor academic performance, early screening can facilitate the identification of students with disabilities who may be targeted for interventions, thereby preventing the development of more serious problems and promoting more positive future outcomes (Ritchey, Saeki, Eklund, Furlong, & Dowdy, 2012).

There are several possible theoretical frameworks for the assessment of children's SE competencies, e.g., the affective social competence model (Halberstadt, Denham, & Dunsmore, 2001), the social information-processing model (Crick & Dodge, 1996), the emotional intelligence model (Mayer & Salovey, 1997), the SEL framework (Lipton & Nowicki, 2009), and the social neuroscience model (Adolphs, 2003). Although these models vary in definition of social and emotional competencies, they are very helpful for conceptualization and assessment of SE competencies. *The Emotional Skills and Competence Questionnaire for Children (ESCQ-C)* was developed within the Mayer and Salovey emotional intelligence model (1997). This model proposes four branches of emotional intelligence that differ in their complexity, from basic abilities to perceive emotions accurately, to more complex abilities to understand emotion and to use them to facilitate thinking (Mayer & Salovey, 1997). Some later models (Joseph & Newman, 2010) excluded the emotional facilitation branch from the model, due to its lack of empirical and theoretical support. Within the cascading model (Joseph & Newman, 2010), the ability to understand emotions mediates the relationship between the ability to perceive emotion and the ability to regulate emotion. Development of emotional understanding depends on having good emotion perception skills, and development of emotion regulation skills relies on the abilities to understand emotions. All these skills are important for our functioning in our social environment.

*The Emotional Skills and Competence Questionnaire for Children (ESCQ-C)* captures all three aspects of emotional intelligence: the self-perceived ability to perceive and understand emotions, to accurately label and express them, and to manage and regulate them. Some abilities apply only to one's own emotions (e.g., perceive and understand emotions), and other to both one's own and other's people emotions (e.g., labelling and managing emotions). This differentiation of one's own and others' emotions is in line with the recent conceptualization of emotional intelligence. Elfenbein and MacCann (2017) suggest new taxonomy for emotional

intelligence that builds on the hierarchical four-branch model. They suggest that EI includes six narrow abilities, and differentiate between emotion regulation of self, and emotion regulation of others. Their taxonomy also includes emotion attention regulation as a new ability. Emotion perception, emotion expression, and emotion understanding are the same EI abilities as in the four-branch model (Mayer & Salovey, 1997).

ESCQ-C was adapted from the *Emotional Skills and Competence Questionnaire* (ESCQ, Takšić, 1998). The ESCQ has been widely used and translated into more than 30 world languages (e.g., Faria et al., 2006), and is often used in research with adults (Takšić, Mohorić, & Duran, 2009; Takšić, Mohorić, & Holmstrom, 2018), but also in adolescents and young adolescents (Costa & Faria, 2016; Mohorić & Takšić, 2016; Valić & Brajša-Žganec, 2018). Validity and reliability for ESCQ subscales were examined in several studies (e.g., Avsec, Takšić, & Mohorić, 2009; Takšić, 1998, 2001; Takšić, Tkalčić, & Brajković, 2001), showing satisfactory results. The preliminary version of the ESCQ for children (ESCQ-C) was developed and tested in the previous study (Stupin, Mohorić, & Ilijašić Veršić, 2017). In that study, we shortened the original ESCQ from 45 to 15 items and re-wrote some items to make them easier for children to understand. Exploratory factor analysis on two different samples confirmed originally proposed three-factor structure, but the Manage and Regulate emotions subscale had the lowest reliability coefficients (.62 and .65). Similar low reliability for this subscale was found in different previous studies (see Takšić et al., 2018). The problem with the low reliability of the Manage and Regulate emotions subscale may arise from the complexity of emotion regulation. In the literature, emotion regulation refers to the processes by which individuals alter one or more components of an emotional response (Peña-Sarrionandia, Mikolajczak, & Gross, 2015). Based on the theory and empirical results, emotion regulation can be conceptualized as a) awareness and understanding of emotions, b) acceptance of emotions, c) ability to control impulsive behaviour, that is, a person's ability to act in accordance with the desired goals when experiencing negative emotions, d) the ability to use situationally appropriate emotional responses (Peña-Sarrionandia et al., 2015). Defined in this way, emotional regulation, if perceived as awareness and understanding of emotions, may be seen as a part of emotional intelligence. Peña-Sarrionandia et al. (2015) tried to integrate these two traditions (emotional regulation and emotional intelligence), by employing the process model of emotional regulation (Gross, 1998). They emphasize that both emotional regulation and emotional intelligence address the problem of emotion management, but emotion regulation focuses on the *processes* (e.g., which permit individuals to influence which emotion they have, when they have them, and how they experience and express them) and emotional intelligence focuses on *individual differences in emotional regulation*.

Emotional self-efficacy (ESE) is another important aspect of emotional functioning, with current measures for children and adolescents focused on the

measurement of self-beliefs in relation to the management of emotions (Qualter et al., 2015). Children's beliefs about whether they think they can successfully perceive, use, understand, and manage emotional information (their emotional self-efficacy) are likely to be important for a diverse range of outcomes. Emotional self-efficacy was developed based on a more general construct of self-efficacy, and Bandura's social cognitive theory (Bandura, 1997). Perceived self-efficacy plays an important role in the processing of emotional information, and has a significant contribution to effective processing, understanding, and management of emotional information, which are all domains of emotional intelligence. Qualter and his colleagues (2015) found small to moderate correlations between emotional self-efficacy and ability emotional intelligence (measured with MSCEIT test), but correlations with trait emotional intelligence (measured with self-report questionnaires) are expected to be higher, since both measure perceived ability to deal with emotional information.

A particular challenge in monitoring socio-emotional development is the construction of scales that are appropriate to children and are a good indicator of development (Humphrey et al., 2011; McCabe & Altmura, 2011). Humphrey and his colleagues (2011) gave a systematic review of measures of social and emotional skills for children and young people. The growing attention to this area has resulted in the development of a large number of measures, which vary on several variables relating to implementation characteristics and psychometric properties. Nevertheless, according to authors, there is little common consensus on what is meant by social and emotional skills, and how they are best measured. Many reports of social and emotional learning program evaluations have not contained any social and emotional skills outcome measures, but instead use proxy indicators of success like reductions in mental health problems or increases in attendance. There is a need for valid and psychometrically sound instruments for the assessment of socio-emotional competencies in children, and our study aims to contribute to the solution of this problem. Our main goal was to further develop and validate children's form of the *Emotional Skills and Competence Questionnaire*, to have a valid measure of children emotional competencies in Croatian language.

## Method

### Participants

The sample consisted of 639 elementary school children (304 boys and 335 girls) aged 10-13 years, with a mean age of 11.24 ( $SD = 0.71$ ). Participants were recruited from 21 elementary schools from different parts of Croatia (Istria, Dalmatia, Slavonia and Central Croatia). Of these schools, 12 were from urban areas of Croatia, and 9 from rural areas. Schools were selected based on their willingness to cooperate. Principals gave consent for the participation and psychologists working in schools selected classes for participation.

## Measures

*The Emotional Skills and Competence Questionnaire – Children's form (ESQ-C, Stupin et al., 2017)* was used for the assessment of self-perceived emotional competences, measuring self-perceived abilities to perceive and understand emotions, to express and label emotions, and to manage and regulate emotions. It is a self-report measure, with a 5-point scale (1 – *never* to 5 – *always*). Preliminary psychometric analysis of the ESQ-C showed good psychometric properties of the questionnaire, with lower reliability coefficients for the regulate and manage emotion subscale (Stupin et al., 2017). In this study, we added 6 additional items to improve the assessment of one's self-perceived ability to regulate and manage others' emotions, increasing the total number of items to 21. Manage and regulate emotion subscale had in total 11 items - 5 for the assessment of the self-perceived ability to regulate one's own emotions and 6 for the self-perceived ability to regulate other's emotions.

*The Self-Efficacy Questionnaire for Children (SEQ-C, Muris, 2001, 2002)* contains 24 items that measure three domains of self-efficacy: *social self-efficacy* (perceived capability for peer relationships and assertiveness); *academic self-efficacy* (perceived capability to manage one's own learning behaviour, to master academic subjects, and to fulfil academic expectations); and *emotional self-efficacy* (the perceived capability of coping with negative emotions). SEQ-C had satisfactory psychometric characteristics (Muris, 2001). We used Croatian adaptation of the questionnaire (Vulić-Prtorić, Sorić, Kramar, & Macuka, 2006). In the Croatian version of SEQ-C, one item was removed from the Emotional self-efficacy scale and added to the Social self-efficacy scale, based on associated factor saturation in exploratory factor analysis (Vulić-Prtorić et al., 2006). Each item was scored on a 5-point scale (1 – *not at all* to 5 – *very well*). In the present study, Cronbach's alpha reliability coefficient was .83 for the total self-efficacy score, .64 for social self-efficacy, .75 for academic self-efficacy, and .72 for emotional self-efficacy. Obtained coefficients are slightly lower than those reported by Muris (2001), and Vulić-Prtorić et al. (2006).

## Procedure

Psychologists who participated in one education on the development of children's emotional competencies were invited to participate in this study. Interested psychologists contacted the researcher and got detailed information about the aim of the study and the used questionnaires. After receiving consent from the principal, the psychologists organized the administration of the questionnaires in their schools. Children were asked to complete the questionnaires in their classrooms. The teacher and/or a research assistant were always available to help children if necessary and to ensure confidential and independent responding. Informed consent was obtained

from parents prior to completion of the questionnaires and students were told that participation is completely voluntary. Permission for conducting this research was obtained from the Ethics Committee of Faculty of Humanities and Social Sciences, University of Rijeka.

## Results

The Statistical Package for Social Sciences (IBM SPSS v25) was used for computing descriptive statistics, correlations, and reliability coefficients (Cronbach's alpha). Confirmatory factor analysis was carried out with the package „lavaan” (Rossem, 2012), for the „R” language and environment for statistical computing (R Development Core Team, 2013).

We tested three different models: the one-factor model, the original three-factor model and the newly proposed four-factor model (with the regulation and manage emotion subscale divided into two factors – the ability to regulate one's own emotions and the ability to regulate emotions of others), as suggested in the new EI taxonomy (Elfenbein & MacCann, 2017).

The distributions of the measured variables were negatively skewed, meaning participants perceived themselves as having well developed emotional competence skills. The average mean response for the single items ranged from 3.01 to 4.38, in the higher part of the theoretical distribution.

### Confirmatory Factor Analysis

Since the Mardia's test of multivariate normality (Korkmaz, Goksuluk, & Zararsiz, 2014) was significant, the robust maximum likelihood method (MLR) was used to estimate the models.

Model fit was evaluated using the chi-square test statistic ( $\chi^2$ ), the Root-Mean-Square Error of Approximation (RMSEA), the standardized root-mean-square residual (SRMR), the Comparative Fit Index (CFI), the Tucker-Lewis index (TLI) and (adjusted) Goodness of Fit Index (AGFI and GFI). RMSEA and SRMR values lower than .08 are usually considered as acceptable model fit and values below .05 are considered as a good model fit (Browne & Cudeck, 1993). CFI, TLI, AGFI and GFI values above .95 indicate good model fit, and values above .90 as moderate model fit (Hu & Bentler, 1999).

The estimated three-factor latent structure models consisted of three factors: Perception and Understanding (PU), Express and Label emotions (EL), and Manage and Regulate emotions (MR). All of the latent variables had multiple indicators (5-11).

In the four-factor model, the Manage and Regulate emotions (MR) factor was divided into two factors: Manage and Regulate one's own emotions (MR-self, 5

items) and Manage and Regulate emotions of others (MR-others, 6 items). We only tested correlated, and not orthogonal models because of the previous study’s results indicating moderate to high correlations between factors (Stupin et al., 2017). In the one-factor model, all of the variables were indicators of the general factor (21 of them).

The variances of all of the latent dimensions were fixed to one (standardized values). The main model parameters are presented in Table 1.

Table 1

*Fit Indices for the Three Competing Models*

MODEL	$\chi^2$	df	RMSEA	SRMR	CFI	TLI	GFI	AGFI
1 factor	735.163	189	.086	.069	.761	.735	.966	.955
3 factors corr.	430.420	186	.058	.052	.894	.880	.982	.976
4 factors corr.	392.089	183	.050	.045	.916	.903	.986	.981

The one-factor model had the lowest fit compared with the three- and four-factor models, although GFI and AGFI showed good fit, with the values above .95. For the three-factor model, RMSEA and SRMR (with values below .08) showed moderate fit, GFI and AGFI showed good fit for the model (with values above .95), and CFI and TLI were below acceptable value of .90. In the four-factor model, all fit indices suggest good fit of the model (Hu & Bentler, 1999).

Standardized factor loadings for the three-factor and four-factor models are presented in Table 2.

Table 2

*Standardized Factor Loadings for Three-Factor and Four-Factor Model*

<b>Three-factor model</b>		<b>Four-factor model</b>	
Items	Standardized loadings	Items	Standardized loadings
<b>Factor 1</b> Perceive and Understand emotions		<b>Factor 1</b> Perceive and Understand emotions	
1	.71	1	.70
4	.67	4	.67
6	.66	6	.66
9	.74	9	.75
11	.70	11	.71
<b>Factor 2</b> Express and Label emotions		<b>Factor 2</b> Express and Label emotions	
13	.59	13	.59
15	.61	15	.60
17	.62	17	.62
19	.65	19	.64
21	.64	21	.64



Three-factor model		Four-factor model	
Items	Standardized loadings	Items	Standardized loadings
<b>Factor 3</b> Manage and Regulate emotions		<b>Factor 3</b> Manage and Regulate one's own emotions	
2	.40	2	.53
3	.55	5	.46
5	.34	7	.47
7	.37	10	.52
8	.52	12	.46
10	.50	<b>Factor 4</b> Manage and Regulate other people's emotions	
12	.43	3	.58
14	.55	8	.54
16	.66	14	.58
18	.61	16	.70
20	.57	18	.60
		20	.56

As can be seen in Table 2, in the three-factor model all items have loadings greater than .30 on their factors. For factor 1 and 2, loadings are quite high, ranging from .60 to .75, and in the third factor some items have lower loadings. Three items had lower loadings (between .30 and .40) and all three belong to Regulate one's own emotions (e.g., *I am able to maintain a good mood even if something bad happens to me., I can maintain a good mood, even when the people around me are in a bad mood.*). In the four-factor model, all items in factors 3 and 4 have loading greater than .40.

Based on the model fit indices and factor loadings, we can conclude that the four-factor model has a good fit to the data. According to confirmatory factor analysis results, ESCQ-C has four subscales, measuring self-perceived abilities to accurately perceive and understand emotions, to express and label emotions, to manage and regulate one's own emotions, and to manage and regulate other people's emotions.

### Reliability Analysis

Next, we analysed the reliability of proposed factors, since low reliability of the Manage and Regulate emotion subscale was a problem in previous studies (Stupin et al., 2017). The reliability coefficients and corrected item-total correlations for both solutions are shown in Table 3.

Table 3

*Corrected Item-Total Correlations and Reliability Coefficients for Proposed Factors*

<b>Three-factor model</b>		<b>Four-factor model</b>	
<b>Items</b>	<b>Item-total correlations</b>	<b>Items</b>	<b>Item-total correlations</b>
<b>Factor 1</b> Perceive and Understand emotions $\alpha = .82$		<b>Factor 1</b> Perceive and Understand emotions $\alpha = .82$	
1	.62	1	.62
4	.59	4	.59
6	.58	6	.58
9	.65	9	.65
11	.64	11	.64
<b>Factor 2</b> Express and Label emotions $\alpha = .76$		<b>Factor 2</b> Express and Label emotions $\alpha = .76$	
13	.50	13	.50
15	.49	15	.49
17	.54	17	.54
19	.55	19	.55
21	.54	21	.54
<b>Factor 3</b> Manage and Regulate emotions $\alpha = .77$		<b>Factor 3</b> Manage and Regulate one's own emotions $\alpha = .61$	
2	.40	2	.43
3	.44	5	.38
5	.35	7	.37
7	.37	10	.34
8	.45	12	.32
10	.43	<b>Factor 4</b> Manage and Regulate other people's emotions $\alpha = .77$	
12	.37	3	.49
14	.43	8	.45
16	.50	14	.52
18	.54	16	.57
20	.49	18	.54
		20	.50

All item-total correlations were moderately high, except for the Factor 3 Manage and Regulate one's own emotions (ranging from .32 to .43). This subscale also had the lowest reliability coefficient ( $\alpha = .61$ ). The reliability analysis showed that when we differentiated between managing and regulating one's own and other people's emotions, proposed subscales had lower reliability, compared to the complete Manage and regulate emotion subscale, with all 11 items. Deleting items from the subscales didn't increase reliability coefficients.

## Descriptive Analysis

We calculated descriptive parameters for ESCQ-C subscales and total score, which are presented in Table 4.

Table 4

*Descriptive Statistics for Emotional Skills and Competence Questionnaire for Children*

	Min	Max	<i>M</i>	<i>SD</i>	K-S <i>Z</i>	Skewness	Kurtosis	$\alpha$
PU	1	5	3.67	0.88	.10**	-.69	.17	.82
EL	1	5	3.87	0.76	.09**	-.51	.05	.76
MR-self	1	5	3.62	0.73	.08**	-.48	.21	.61
MR-other	1	5	4.02	0.67	.11**	-.67	.21	.77
ESCQ-C	1	5	3.74	0.63	.06**	-.61	.71	.88

*Note.* PU = Perceive and Understand emotions; EL = Express and Label emotions; MR-self = Manage and Regulate one's own emotions; MR-other = Manage and Regulate other people's emotions; ESCQ-C = Emotional Skills and Competence Questionnaire for children; K-S *Z* = Kolmogorov-Smirnov test; \*\* $p < .01$ .

All subscales and total ESCQ-C score had the observed range within the theoretical range, indicating that scales have good sensitivity. Only the mean value for manage and regulate other's emotion subscale was close to a maximum value ( $M = 4.02$ ). The Kolmogorov-Smirnov test was statistically significant, and both Skewness and Kurtosis were below 1.

## Convergent Validity

In order to examine the convergent validity of ESCQ-C, we calculated correlation coefficients between subscales of ESCQ-C and SEQ-C questionnaires (Table 5).

Table 5

*Correlation Coefficients between Subscales of ESCQ-C and SEQ-C*

	PU	MR-self	MR-other	SSE	ASE	ESE
Express and Label emotions (EL)	.43	.52	.48	<b>.46</b>	<b>.36</b>	<b>.45</b>
Perceive and Understand emotions (PU)	-	.43	.59	<b>.41</b>	<b>.33</b>	<b>.29</b>
Manage and Regulate own emotions (MR-self)		-	.46	<b>.39</b>	<b>.33</b>	<b>.48</b>
Manage and Regulate others emotions (MR-other)			-	<b>.50</b>	<b>.36</b>	<b>.32</b>
Social self-efficacy (SSE)				-	.45	.45
Academic self-efficacy (ASE)					-	.37
Emotional self-efficacy (ESE)						-

*Note.* All coefficients are significant at  $p < .01$  level.

All four ESCQ-C subscales had moderate correlations with self-efficacy scales, ranging from .29 to .50. Children with self-perceived competencies to manage and regulate emotions (one's own and other people's) also had better results on the social self-efficacy subscale ( $r = .39$ , and  $.50$ ), those with self-perceived abilities to express and label emotions had high emotional ( $r = .45$ ) and social self-efficacy ( $r = .46$ ). The correlations with the academic self-efficacy were also significant and moderately high, suggesting that emotional competency is correlated not only to the social and emotional aspects, but also to children's perceived capability to manage their learning behaviour, and master school requirements. Correlation coefficients obtained in this study are expected and confirm good convergent validity of the ESCQ-C.

### **Discussion and Conclusion**

This study further explores the structural and convergent validity of *Emotional Skills and Competence Questionnaire for children (ESCQ-C)*. Confirmatory factor analyses showed that the four-factor model had the best fit, with all the fit indices in the acceptable range (Hu & Bentler, 1999). In the previous study, the Manage and regulate emotions subscale had the lowest reliability (Takšić et al., 2018) so we tried to resolve this issue by adding new items. Since new taxonomy of emotional intelligence (Elfenbein & MacCann, 2017) propose that EI is composed of six narrow abilities (emotion perception, emotion expression, emotion attention regulation, emotion understanding, emotion regulation of self, and emotion regulation of others) we tried to differentiate between emotion regulation of self and emotion regulation of others. So, the proposed structure for the ESCQ-C had four subscales: express and label emotions, perceive and understand emotions, and manage and regulate one's own and other's emotions. Results of confirmatory factor analyses confirmed this four-factor structure, although reliability for manage and regulate one's own emotions was still lower. Low reliability might be due to small item numbers (5), but also because of the item content, since item-total correlations were the lowest for this subscale and ranged from .32 to .43. Similar lower reliability coefficients were reported by Gullone and Taffe (2011). They validated the *Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA)* and found that Cronbach's alpha was between .69 and .79. Also, one of the reasons for lower reliability of this subscale could be the complexity of the construct measured. As stated in the paper written by Cole, Martin, and Dennis (2004), emotion regulation has become very popular in psychological literature, and different studies use the term very differently. Emotion regulation can be defined very broadly, and include the ability to identify, understand, and accept emotional experiences, to control impulsive behaviour in a state of stress, and to be flexible in emotional responses and adapt to the demands of the situation (Gratz & Roemer, 2004). When a construct has a very wide definition, it makes it harder to precisely operationalize it and to develop a measure that can

adequately assess it. In that sense, it can be expected that this subscale will be the most problematic.

All four subscales of ESCQ-C correlate with each other, which is consistent with Mayer, Caruso, and Salovey's (1999) assumption that EI narrow abilities should correlate positively. Joseph and Newman's (2010) meta-analysis also found that the three major EI abilities were substantially correlated (perception and understanding correlated at .46, perception and regulation at .34, and understanding and regulation at .55), which is comparable to correlation coefficients obtained in this study.

Convergent validity was examined through correlations with self-efficacy scales. All four subscales of the ESCQ-C had moderate to high correlation with social, academic and emotional self-efficacy, which shows good convergent validity of the questionnaire. In general, children who are emotionally competent also perceive they have better capabilities in social, academic and emotional areas. Children with good abilities to manage and regulate emotions also had better self-perceived capability to deal with social challenges, and those who are able to express and label emotions had high emotional self-efficacy (e.g., capability of coping with negative emotions) and high social self-efficacy. The correlations with the academic self-efficacy were also significant and moderately high, suggesting that emotional competency is correlated to children's perceived capability to manage learning behaviour and master academic subjects. According to previous studies, both emotional intelligence and self-efficacy should be taken into account when examining the causes of success (Pérez-Fuentes, Molero Jurado, del Pino, & Gázquez Linares, 2019).

The role of educational institutions today extends from the exclusive focus on acquiring academic competences to ensuring the mental health of children and encouraging and monitoring their personal and emotional development. In order to be able to intervene through prevention programs without unnecessary delay, it is necessary to adequately measure the emotional and social competence, and to monitor changes during the development (Ysseldyke et al., 2010). Evaluating the emotional and social development of school children represents a particular challenge because there are no standardized procedures that are systematically applied in educational institutions.

In this study, our goal was to further develop and validate the *Emotional Skills and Competence Questionnaire for Children*. Confirmatory factor analysis confirmed four factors, with management and regulation subscale divided into two – regulation of one's own and other's emotion. This distinction is consistent with new taxonomy which defines EI as six narrow abilities - emotion perception, emotion expression, emotion attention regulation, emotion understanding, emotion regulation of self, and emotion regulation of others (Elfenbein & MacCann, 2017). The reliability of one subscale (regulation of one's own emotions) was below the .70, and all other reliability coefficients were acceptable. Further development of ESCQ for children should focus on solving this problem since the importance of functional emotion

regulation for the aetiology, expression, and course of psychological disorders is well recognized (Southam-Gerow & Kendall, 2002). Future studies should also address the problem of predictive and incremental validity of the ESCQ-C.

## References

- Adolphs, R. (2003). Cognitive neuroscience of human social behavior. *Nature Reviews Neuroscience*, 4, 165-178.
- Avsec, A., Takšić, V., & Mohorić, T. (2009). The relationship of trait emotional intelligence with the Big Five in Croatian and Slovene university student sample. *Psihološka obzorja*, 18, 99-110.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Broadway, UK: Worth Publishers.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotional regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development*, 75, 317-333.
- Costa, A., & Faria, L. (2016). Emotional intelligence throughout Portuguese secondary school: A longitudinal study comparing performance and self-report measures. *European Journal of Psychology of Education*, 31, 419-437.
- Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms on reactive and proactive aggression. *Child Development*, 67, 993-1002.
- Elfenbein, H. A., & MacCann, C. (2017). A closer look at ability emotional intelligence (EI): What are its component parts, and how do they relate to each other? *Social and Personality Psychology Compass*, 11, e12324. <https://doi.org/10.1111/spc3.12324>
- Faria, L., Lima Santos, N., Takšić, V., Rätty, H., Molander, B., Holmström, S., & Toyota, H. (2006). Cross-cultural validation of the Emotional Skills and Competence Questionnaire (ESCQ). *Psicologia*, 20, 95-127.
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41-54. doi:10.1023/B:JOBA.0000007455.08539.94
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271-299. doi:10.1037/1089-2680.2.3.271
- Gullone, E., & Taffe, J. (2012). The Emotion Regulation Questionnaire for children and adolescents (ERQ-CA): A psychometric evaluation. *Psychological Assessment*, 24(2), 409-417. <https://doi.org/10.1037/a0025777>

- Halberstadt, A. G., Denham, S. A., & Dunsmore, J. C. (2001). Affective social competence. *Social Development, 10*, 79-119.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling Multidisciplinary Journal, 6*, 1-55. doi:10.1080/10705519909540118
- Humphrey, N., Kalambouka, A., Wigelsworth, M., Lendrum, A., Deighton, J., & Wolpert, M. (2011). Measures of social and emotional skills for children and young people: A systematic review. *Educational and Psychological Measurement, 71*, 617-637.
- Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology, 95*, 54-78.
- Korkmaz, S., Goksuluk, D., & Zararsiz, G. (2014). *MVN: Multivariate Normality Tests*. R package version 3.7.2014. <http://www.biosoft.hacettepe.edu.tr/MVN/>
- Lipton, M., & Nowicki, S. (2009). The social emotional learning framework (SELF): A guide for understanding brain-based social emotional learning impairments. *Journal of Developmental Processes, 4*, 99-115.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27*(4), 267-298. doi:10.1016/S0160-2896(99)00016-1
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (pp. 3-31). New York: Basic Books.
- McCabe, P. C., & Altamura, M. (2011). Empirically valid strategies to improve social and emotional competence of preschool children. *Psychology in the Schools, 48*, 513-540.
- Mohorić, T., & Takšić, V. (2016, May). *DIF analiza Upitnika emocionalne kompetentnosti Mantel-Haenszel metodom: Kros-kulturalna usporedba [DIF analysis of the Emotional Competency Questionnaire by Mantel-Haenszel method: The cross-cultural comparison]*. Paper presented at XX. Days of psychology in Zadar, Zadar, Croatia.
- Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behavioral Assessment, 23*, 145-149.
- Muris, P. (2002). Relationships between self-efficacy and symptoms of anxiety disorders and depression in a normal adolescent sample. *Personality and Individual Differences, 32*, 337-348.
- Peña-Sarrionandia, A., Mikolajczak, M., & Gross, J. J. (2015). Integrating emotion regulation and emotional intelligence traditions: A meta-analysis. *Frontiers of Psychology, 6*, 160. doi:10.3389/fpsyg.2015.00160
- Pérez-Fuentes, M. dC., Molero Jurado, M. dM., del Pino, R. M., & Gázquez Linares, J. J. (2019). Emotional intelligence, self-efficacy and empathy as predictors of overall self-esteem in nursing by years of experience. *Frontiers of Psychology, 10*, 2035. doi:10.3389/fpsyg.2019.02035

- Qualter, P., Dacre Pool, L., Gardner, K. J., Ashley-Kot, S., Wise, A., & Wols, A. (2015). The Emotional Self-Efficacy Scale: Adaptation and validation for young adolescents. *Journal of Psychoeducational Assessment, 33*, 33-45.
- R Development Core Team. (2013). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. <http://www.R-project.org/>
- Raver, C. C., & Knitzer, J. (2002). *Ready to enter: What research tells policymakers about strategies to promote social and emotional school readiness among three and four-year-olds*. Chicago: Harris School of Public Policy Studies, University of Chicago. Retrieved from <https://ideas.repec.org/p/har/wpaper/0205.html>
- Ritchey, K., Saeki, E., Eklund, K., Furlong, M., & Dowdy, E. (2012). Screening for mental health and wellness: Current school-based practices and emerging possibilities. In B. Doll, W. Pfohl, & J. S. Yoon (Eds.), *Handbook of youth prevention science* (pp. 82-107). Oxford: Routledge, Taylor & Francis Group.
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*, 1-36.
- Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. *Clinical Psychology Review, 22*, 189-222.
- Stupin, M., Mohorić, T., & Ilijašić Veršić, I. (2017). Upitnik emocionalne kompetentnosti za djecu (UEK-D) – Preliminarni rezultati prilagodbe i validacije [Emotional Competency Questionnaire for Children (UEK-D) - Preliminary analysis and validation results]. *Suvremena psihologija, 20*, 137-149.
- Takšić, V. (1998). *Validacija konstrukta emocionalne inteligencije [Validation of the construct of emotional intelligence]*. (Unpublished doctoral dissertation). Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb.
- Takšić, V. (2001). Upitnici emocionalne kompetentnosti (inteligencije). [Emotional competence (intelligence) questionnaires]. In K. Lacković-Grgin & Z. Penezić (Eds.), *Zbirka psihologijskih mjernih instrumenata [The collection of psychological instruments]* (pp. 27-41). Zadar: University of Zadar.
- Takšić, V., Mohorić, T., & Duran, M. (2009). Emotional Skills and Competence Questionnaire (ESCQ) as a self-report measure of emotional intelligence. *Psihološka obzorja, 18*, 7-21.
- Takšić, V., Mohorić, T., & Holmstrom, S. (2018). Cross-cultural studies of trait emotional intelligence using the Emotional Skills and Competence Questionnaire. In M. C. Perez-Fuentes, M. M. Molero Jurado, & J. J. Gazquez Linares (Eds.), *Emotional intelligence: Perceptions, interpretations and attitudes* (pp. 29-64). New York: Nova Science Publishers, Inc.
- Takšić, V., & Smojver-Ažić, S. (2016). *Promocija zdravlja razvojem socio-emocionalnih kompetencija u školskom okruženju [Health promotion by developing socio-emotional competencies in a school setting.]* Rijeka: Department of Social Medicine and Epidemiology, Faculty of Medicine, University of Rijeka.



- Takšić, V., Tkalčić, M., & Brajković, S. (2001, July). *Emotional intelligence: An empirical validation of the construct*. Poster presented at the 7<sup>th</sup> European Congress of Psychology, London, UK.
- Valić, J., & Brajša-Žganec, A. (2018). Kvaliteta obiteljske interakcije i emocionalna kompetentnost kao odrednice agresivnog ponašanja djece školske dobi [Quality of family interaction and emotional competence as determinants of aggressive behavior of school-age children]. *Napredak*, 159, 115-138.
- Vulić-Prtorić, A., Sorić, I., Kramar, V., & Macuka, I. (2006). Upitnik samoefikasnosti za djecu – SEQ-C [Self-efficacy questionnaire for children - SEQ-C]. In V. Čubela Adorić, A. Proroković, Z. Penezić, & I. Tucak (Eds.), *Zbirka psiholoških skala i upitnika: Svezak 3 [The collection of psychological instruments]* (pp. 87-92). Zadar: University of Zadar.
- Ysseldyke, J., Burns, M. K., Scholin, S. E., & Parker, D. C. (2010). Instructionally valid assessment within response to intervention. *Teaching Exceptional Children*, 42, 54-61.

Received: December 15, 2019