Emotional intelligence in early adolescence: Validation data based on peer ratings and an objective ability-based test

Vesna Buško[1], Ana Babić Čikeš[2]

[1](Department of Psychology, Faculty of Humanities and Social Sciences/
University of Zagreb, Croatia)
[2](Department of Psychology, Faculty of Humanities and Social Sciences/
Josip Juraj Strossmayer University of Osijek, Croatia)

ABSTRACT: *The paper presents a part of empirical validation procedures on emotional intelligence as operationalized by two different assessment methods but derived from the same ability-based conceptualization. The study was conducted on a sample of 180 seven- and eight-grade primary school students. The structure of age and gender differences in EI dimensions was examined by canonical discriminant analysis. Confirmatory factor analyses demonstrated moderate convergence between the performance-based emotion management EI test and peer-rated EI measures. By use of hierarchical regression procedures we tested the relative importance of emotional intelligence variables in explaining sociometric status as a measure of social adjustment in primary school pupils. The results showed that the regression equation including age and sex as general demographic features, GPA as a substitute for a general capacity measure in pupils, and emotional intelligence variables can account for approximately 65% of criterion variance. Peer-rated emotional regulation abilities showed considerable additive contribution to the criterion variance, whereas the role of Emotion management test within the predictor structure examined proved to be practically and statistically insignificant.*

Keywords – *emotional intelligence, ability-based measurement, peer-ratings, adolescence*

I. INTRODUCTION

Basic assumption behind all approaches to the study of emotional intelligence (EI) is that high EI individuals possess preferable personal qualities (or accomplishments) relevant for adaptive functioning, such as more sophisticated interpersonal skills, better interpersonal relationships, or that they show higher academic achievement. As initially described by the promoters of this intriguing construct, EI "…concerns the ability to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought" ([1], p 511). The idea on the existence of individual differences in emotional capabilities and its prospective relationships to real-life functioning aroused not only a huge scientific and public interest but also intensive debates and controversies as in community of researchers so in popular media (e.g. [2, 3]). Since its appearance in scientific circles at the beginning of 1990's, the work on EI developed into a rather active and exciting research area, with several hundred journal articles published so far on key conceptual and validation issues (see e.g., [4, 5, 6]) including dispositional correlates of EI (e.g., [7]), and predictive value of various operationalizations of EI in accounting for important life criteria (e.g., [8]).

Diverse theoretical approaches currently existing in EI literature, Mayer et al. [1] sort into three main classes: one includes those that focus on specific mental capacities or skills considered to be fundamental to EI (e.g. [9]), the second class refers to integrative model approaches which regard EI as cohesive global ability, such as Izard's emotional knowledge approach [10] or the four-branch model of EI [11], and the third class is referred to as mixed model approaches with rather broad definitions of EI that include "..noncognitive capability, competency or skill" [12] and "dispositions from personality domain" [13]. Despite obvious differences there are now several sources of theoretical consensus between the approaches. It is, thus, generally agreed that EI is multifaceted, with different degree of overlap of multiple EI constructs with other constructs depending basically on operationalizations. Based on increasing body of empirical evidence, EI constructs show meaningful relations with external criteria commonly indicating social and/or emotional wellbeing (e.g., [14]). It has further been affirmed that EI has well-defined developmental trajectory [3]. With regard to applied issues, research suggests that EI can add to the prediction of outcomes in a range of real-life settings [15, 16, 1].

Nonetheless, after more than two decades of research and conceptualizing, the scientists in the area agree that EI is still a novel field of research, with many unknowns concerning its theoretical meaning, measurement, and the evidence of its applied value [3]. The discussions continue about theoretical and pragmatic utility of this "new" construct, and the presence of a number of different and often mutually

conflicting definitions, conceptualizations, and operationalizations, makes the overall scientific contribution of EI research rather difficult to assess [17, 18, 19, 3, 4, 1].

These queries are especially marked when speaking of either methodological or practical issues on EI as studied in preadolescent population [20, 21]. In general, there is a lack of research on EI in late childhood and early adolescence age groups despite the fact that these are the periods of intensive emotional development and heightened emotional sensitivity [22, 23]. Thus far accumulated findings pertaining to younger age groups are mainly anchored in mixed-model approaches or trait EI perspective, where EI is typically viewed as a set of lower level dimensions of personality and consisted of self-perceived emotion-related abilities and dispositions [24, 13]. The conceptualization of EI as a type of cognitive ability [25] received much less attention in research on preadolescence [26, 27, 28]. This is probably largely due to a lack of adequate age-appropriate measures of the ability-based EI dimensions.

Ability model approaches imply performance-based operationalizations, such as well-known MSCEIT [29], or its recently developed youth version (MSCEIT-YV; [27]). Yet, some self-report EI measures have also been developed following Salovey& Mayer's [25] mental ability conceptualization (e.g., SSRI; Schutte et al., 1998, cited in [15]. Notwithstanding the simplicity of use of self-report EI scales there are obvious drawbacks attached to this kind of measures. A major problem is that they do not mirror actual but self-perceived ability levels, which are shown to be poorly related to objective ability estimates (see e.g. [14]). Probable occurrence of irrelevant sources of variance due to social desirability effects on responding is another problem of such measures.

Having in mind the weaknesses of self-report EI measures, other reports sometimes serve as a suitable alternative approach for measuring EI [30, 31]. It may be argued that other knowledgeable persons can make better estimates of capabilities and diverse personal attributes than target person him or herself. Moreover, such kind of measurement can be expected to show better metric quality compared to self-reports, especially in cases where averaged scores by a group of peers are used. And still, data obtained by other reports require simple and usually less expensive procedure compared to performance based instruments.

This study was conceived as a contribution to empirical evidences on the validity of emotional intelligence as operationalized by two different assessment methods but derived from the same ability-based conceptualization. We present an attempt at operationalization of some of the Mayer and Salovey's[11] proposed branches of emotional intelligence intended to assess these capabilities in early adolescents. A preliminary version of a new performance-based test designed to measure abilities of managing emotions as the forth branch of Mayer and Salovey's model is outlined. The nature of relationships between this composite measure and the peer-rating measures of the hypothesized facets of EI was examined in the confirmatory factor framework. Besides, the structure of age and gender differences in EI dimensions was examined by canonical discriminant analysis. To obtain evidence on incremental predictive validity of the EI measures administered, we also examined their independent additive contribution in explaining the variance of students' sociometric status used as a social adjustment criterion.

II. METHOD

2.1. Participants and procedures

The study was done on a sample of 180 students of 7th and 8th grade in one primary school in Đakovo, Croatia. The sample was balanced according to gender (54% were males) and the grade students attended (53% of 8th grade students). Mean age of students was 13.58 yrs, with a total range of 12-15 yrs. The study was conducted through group administration procedures during the regularly scheduled classes. All students had parental informed consent and were willing to participate. Students completed all the instruments during a single class period (45–50 minutes).

2.2. Measures

Emotion management test. To assess the hypothesized abilities to regulate emotions in oneself and others in early adolescent age we composed a new performance-based instrument called Emotion management test. The intentional construct behind the test items corresponds to the forth branch of Mayer and Salovey's[11] model. A total of 24 items of the test refer to 6 hypothetic situations provoking different emotions (positive and negative). There are 4 statements given in response to each situation, referring to behavioral options in a situation described, and differing by design in usefulness for the person in situation. Half of the items describe situational content that relates to managing own emotions and another half to managing others' emotions. For example, *Iva is very angry because her younger sister demolished her book. How useful would every of following behavioral options be for Iva to feel better: (a) To go into another room and take a deep breath, (b) To yell at her sister,(c) To tell her parents what happened, (d) To think about doing something similar with her sisters toys? P*articipants were to appraise usefulness of each of the given options for a person(s) on a 5-point scale (1 =totally useless to 5 very useful). Scoring was done according to expert criteria with "correct answer" scored 2 points, nearest to correct

answer 1 point, and remaining answers 0. Total scores were calculated as the sum of scores on individual items. Higher scores represent higher ability. Cronbach alpha internal consistency coefficient obtained in this sample for the scoring rule applied was .51. In addition, two subscale scores comprising items related to managing own and others' emotions, respectively, were also calculated and used is part of the analyses reported in this study.

Peer ratings of EI. Five different facets of EI skills and abilities were assessed using mutual schoolmates' ratings. The main criterion for the selection of facets of EI was its suitability for the population of the specified age, i.e. participants had to be familiar with the skills and/or abilities to be assessed. The assessed EI capacities were: (1) the ability to perceive/recognize others' emotions; (2) to express one's emotions in words; (3) to pay attention for others' feelings; (4) to cheer up others when they are upset; (5) to settle down fight or conflicting situation in the class. The technique of nominating was used so that for each of the 5 abilities participants were to name 3 students from the class regarded as most/least skillful. One score per each of 5 appraised abilities was calculated for each student by the formula:

$$X_{ij} = 1 + (\text{number of "+"} - \text{number of "−" choices}) / \text{Total number of choices}.$$

Scores on each of the 5 variables thus created varied in theoretical range of 0 – 2.

Sociometric status (SCM). Naming technique with a limited number of positive and negative choices was used to obtain an indicator of sociometric status of students. SCM served as a criterion measure against which a role of EI measures used were assessed. SCM measure was composed of peer nominations following two emotional and one functional standard as bases for making personal preferences. According to the instructions given for this instrument, participants were to name 3 students from the class they preferred or not preferred to (1) sit with, (2) take part in a school project, and (3) go with on a trip. SCM scores were calculated by the same formula as for EI peer ratings. Total SCM score was defined as a simple linear combination of scores on the three SCM criteria.

Grade point average (GPA) was used in the multivariate test of predictive validity as a substitute for cognitive status and served as a control variable together with demographic features at the first step of hierarchical regression analysis. It was defined as an average school achievement at the end of the fall semester of the current school year.

III.   RESULTS AND DISCUSSION
3.1. Descriptives and bivariate relationships
Main descriptive statistics and intercorrelations of variables used in the study are given in Tables 1 and 2, respectively. Slight departures from normality are found in three of the five peer-rating EI variables as shown by Kolmogorov-Smirnov z-values, whereas the scores on Emotion management test, sociometric index, GPA, and the remaining peer-rating EI indices follow normal distribution of data. As noted already in the Method section, reliability estimate obtained for Emotion management test, as the only measure in this study for which this kind of internal consistency reliability index makes sense, is relatively low (Cronbach's alpha is .51). The obtained coefficient for this instrument is, however, not surprising having in mind that a preliminary form of the test was used, being rather heterogeneous in content and administered for the first time on the sample described in this study. Besides, the reliability level obtained shows to be in line to those reported for instruments designed to assess similar or even narrower EI constructs, including values reported for adult version of MEIS and MSCEIT when considered at the branch level ([29]). The ability to manage emotions is regarded as the most complex ability of emotional intelligence which might have been reflected in difficulties in designing its operationalizations as was also noted in some other research [33, 29, 34]. Recently published studies using the new youth version of MSCEIT report on higher internal consistency measures, though for the overall EI on the MSCEIT YV [35], or the Cronbach's alpha values for the branches ranging from .70 to .79 [27].

Table 1 – Main descriptive statistics of the variables (N=180)

Variable	M	σ	Min	Max	z	p
Emotion management test	23.983	5.032	7.00	38.00	1.061	0.210
Peer-ratings:						
Perceiving others' emotions	0.998	0.210	0.39	1.71	1.361	0.049
Expressing one's emotions in word	0.999	0.200	0.43	1.61	1.258	0.084
Paying attention for others' feelings	0.996	0.220	0.44	1.79	1.397	0.040
Cheering up others	1.003	0.200	0.52	1.67	1.089	0.187
Settling down conflicts	1.002	0.235	0.17	1.83	1.623	0.010
GPA	4.014	0.745	2.15	5.00	1.260	0.084
SCM	3.013	0.617	0.83	4.18	1.106	0.173

Note. z- Kolmogorov Smirnov z value; p- statistical significance of Kolmogorov Smirnov z

As shown in correlation matrix from Table 2, scores on Emotion management test reach significant albeit relatively low positive correlations with three out of five peer-rating EI measures. Intercorrelations among all peer-rating EI scores are expectedly highly significant and vary in range from .235 to .788, with highest coefficients obtained between appraised ability to recognize others' emotions with rated abilities to pay attention for others' feelings as well as those related to expressions of one's emotions in words.

Significant, low to moderate correlations were obtained between gender and most of the EI measures used, suggesting that girls tend to show superiority on EI indices, with an exception of peer-rated ability to cheer up others where no relationship was detected. The finding on gender differences in EI is expected and explainable by developmental differences typical for the pubertal age groups that our sample belongs to [22, 3]. To examine the role of gender and age in portraying the results on EI relationships in some more detail we performed canonical discriminant analysis on four subgroups of students. The results of this analysis are given in the next section.

Table 2 – Intercorrelations of variables

Variables	1	2	3	4	5	6	7	8
1 Gender	-							
2. Age	-0.093	-						
3. Emotion management test	0.259**	-0.073	-					
4. Perceiving others' emotions	0.325***	-0.063	0.132*	-				
5. Describing emotions	0.402***	-0.154*	0.262**	0.619***	-			
6. Paying attention for others' feelings	0.451***	-0.088	0.124	0.788***	0.529***	-		
7. Cheering up others	0.014	-0.073	0.092	0.305***	0.434***	0.235**	-	
8. Settling down conflicts	0.153*	-0.017	0.173*	0.561***	0.496***	0.541***	0.440***	-
9. GPA	0.202**	-0.168*	0.123	0.435***	0.581***	0.438***	0.223**	0.428***

Note. *p<.05; **p<.01; ***p<.001.

3.2. The structure of age and gender differences in EI measures

Canonical discriminant analysis was done to test the structure of differences in EI scores, i.e., the scores on two emotion management measures and five peer rating scores, between the 4 groups defined by gender and generation of students (7th and 8th primary school graders). The analysis produced one statistically and practically significant canonical discriminant function with Wilks' Λ=.623 (chi square=81.62, df=21, p<.001), which explained 88.1% of intergroup variability in the space of seven EI measures utilized. The obtained eigenvalue (λ=.502) and canonical correlation (r_c=0.578) speak of reasonably strong discrimination between the four groups. The meaning of intergroup differences and contributions of each EI variable in defining the scores on the first discriminant function is described by the two sets of coefficients given in Table 3. Following both structure coefficients and standardized canonical discriminant function coefficients, two variables have major contribution to the overall intergroup discrimination. In accord with their univariate discriminating power and previously presented bivariate relationships, the first and only significant discriminant function is mainly defined by the peer estimated abilities to *pay attention for others' feelings* (r=.721) and to *express one's emotions in words* (r=.622). Perceived ability to *recognize emotions in others* (r=.721) shares the same size of correlation with the function even though its contribution to the discriminant scores is of negative sign (-.375), obviously due to rather high intercorrelations especially among these three peer-rated abilities. *Managing own emotions* ability shows somewhat smaller albeit not negligible contribution to the function (r=.356), whereas the remaining three EI variables practically do not add to intergroup discrimination.

Table 3 – Structure matrix and standardized coefficients for the first canonical discriminant function

Discriminant variables	Structure coefficients	Standardized coefficients
Peer ratings: the ability to…		
…pay attention for others' feelings	**0.721**	**0.984**
…express one's emotions in words	**0.622**	**0.645**
…recognize others' emotions	**0.721**	**-0.375**
…cheer up others when they are upset	**0.021**	**-0.308**
…settle down fight or conflicting	**0.213**	**-0.336**
Emotion management test: the ability to…		
…manage own emotions	**0.356**	**0.280**
…manage others' emotions	**0.255**	**0.194**

As apparent from the signs of the presented structure coefficients, high and low discriminant function scores characterize generally higher and lower EI abilities, respectively. The positions of the four subgroups of students on the derived functions can give a full account of the nature of the observed intergroup differences in the space of the EI variables employed. The obtained values of group centroids for younger and older girls are C=.703 and C=.798, respectively, and the obtained values for boys are C=-.583 and C=-.703, respectively. The results clearly show that gender is the major source of discrimination between the groups while age just slightly contributes to intergroup discrimination. Further, according to the values of four group centroids, the obtained gender differences are somewhat more pronounced among older, 8th grade students than in the group of 7th graders, suggesting that somewhat different trajectory of development in EI abilities might exist between genders.

The results on gender differences generally replicate those repeatedly found in studies on EI, social and emotional competencies, and related constructs in adults [2, 14]and/or adolescent populations [30, 27]. The structure and the direction of the obtained differences resemble those usually found in studies on ability-based EI models with the use of objective performance tests (e.g., [17, 36, 34, 21, 8]), situational judgement tests [37], or self-report scales [38, 39], and to the lesser extent within so-called mixed or trait EI models [20, 13]. Moreover, theoretical predictions on gender differences in EI are also implied by Mayer and Salovey's model, including socialization, but also evolutionary and physiological rationale [14, 1, 36].

3.3. Latent structure of EI measures

Confirmatory factor analysis was performed to examine the structure of relationships between the composite measure of emotion management ability and the peer-rated measures of 5 hypothesized facets or the dimensions of EI. The analyses were done on covariance matrices of 7 indicator variables–two emotion management subscale scores and 5 peer-rated EI scores–with maximum likelihood as an estimation method, using LISREL 8.8. software [40]. Two hypothetical models were tested and compared with regard to their fit to the empirical data. The first model included two latent variables, one of which loaded two emotion management indicators and the other one loaded remaining indicators composed of 5 peer-rated EI abilities. The second model put forward three latent factor structure and assumed separate latent variables referring to experiential and strategic EI dimension based on peer-rating data. Peer-rating variables used to define Experiential dimension were the ability to perceive others' emotions and the ability to pay attention for others' feelings, whereas the remaining three peer-rating variables were used as indicators of Strategic EI dimension: the ability to put one's emotions in words, to cheer up others when they are upset, and to settle down fight or conflicting situation in the class.

Although moderately high intercorrelations were found among most of peer-rating variables, the separation of the described EI subdimensions in the confirmatory factor frame served to test the hypothesized hierarchy suggested by the authors of the Four-Branch Model of EI [1]. If the proposed structure proves true, emotion management latent variable would be expected to correlate higher with strategic EI than with experiential EI latent dimension, following theoretical propositions by Mayer and associates (e.g., [14, 41]). Such an outcome thus may well be viewed as a contribution to convergent and discriminant validity of the Emotion management test.

It should be noted that the specification of the two CFA models was equal in every respect except for splitting up the peer-rated EI factor into two latent variables in the second model. Error variances of the two indicators of Emotion management test were set to be equal and the loadings of the matching indicators per latent variable were set to unity in both models. Hence, the two models were directly comparable and can be

viewed as nested since the difference between them is basically in the magnitude of correlation of the two peer-rated EI latent variables. The results of CFA with main fit indices for the two models are given in Table 4.

Table 4 – Main fit indices and related statistics for EI confirmatory factor models comparisons

Model	χ^2 (df)	p	χ^2/df	RMSEA	GFI	AGFI
1. Two-factor model	51.14 (14)	<.001	3.65	.123	.92	.85
2. Three-factor model	20.85 (12)	.053	1.74	.065	.97	.92
2a. Three-factor model - modified	7.70 (11)	.740	0.70	.000	.99	.97

Model 2 with three latent variables showed incomparably better fit to the empirical data according to all the calculated indices. The obtained difference in chi-square values for the two models ($\Delta\chi^2$= 30.29 with Δdf=2, p<.001) is highly statistically significant suggesting that the three factor model presents better description of the covariance structure among the seven EI indicator variables used. Nevertheless, the obtained fit indices (RMSEA=.065, AGFI=.92) show that even this model cannot be deemed acceptable according to the conventional criteria. Based on content and the meaning of the specific peer-rating variables and expected model improvements after modifications, we added a new parameter to be estimated for the residual covariance between two strategic EI indicators: the ability to put one's emotions in words, and to settle down conflicting situation in the class. This modified three-factor model showed highly significant increase in model fit ($\Delta\chi^2$= 13.15, Δdf=1, p<.001) with all other indices (RMSEA=.000, GFI=.99; AGFI=.97, χ^2= 7.70, df=11, p=.740) demonstrating excellent fit to empirical data. Therefore, model parameters were estimated based on this final three-factor model (Fig. 1).

As shown on Fig. 1, reasonably high correlation was observed between experiential and strategic EI latent variables (r=.67, p<.001) operationalized by students' ratings. Emotion management latent variable was found to correlate significantly albeit lower with strategic EI (r=.37, p<.001), but not with experiential EI latent dimension (r=.23, ns). This finding appears noteworthy in terms of adding to validity evidence pertaining to EI construct, having in mind that self-report and other- or peer-report measures even of the same constructs generally tend to show rather weak or modest correspondence. The size of observed correlations is usually still lower when relationships of either self- or peer-reports with performance-based measures are considered.
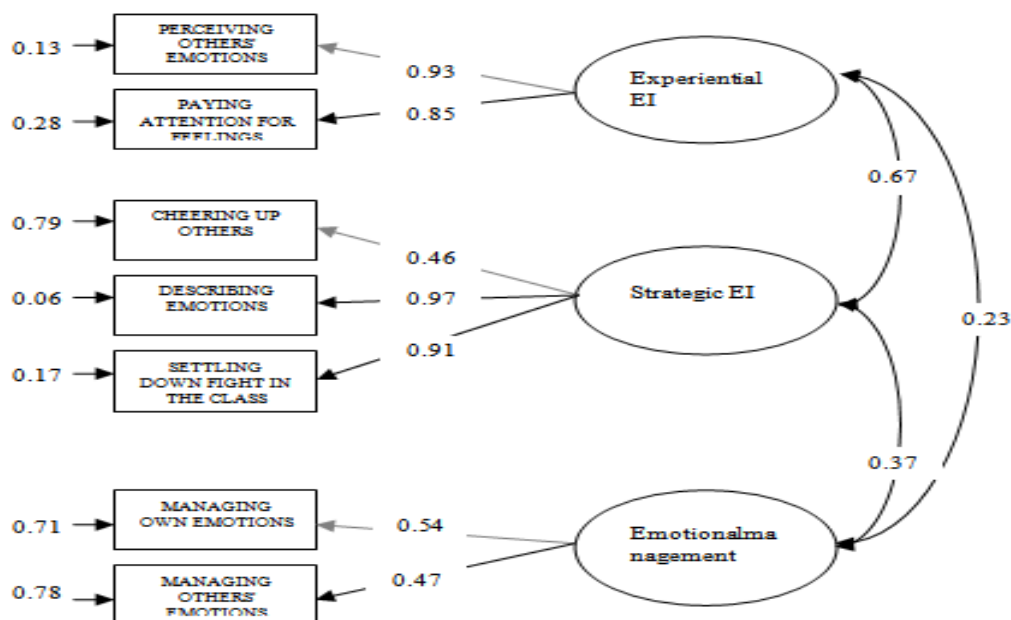

**Figure 1 – Final confirmatory model of peer-rated and
Performance-based EI test data: Standardized path coefficients**

Note. All parameters, except for correlation between experiential EI and Emotion management latent variables, are significant with p<.001; Residual covariance of indicators *Ability to put one's emotions in words* and *Ability to settle down fight in the class* equals -.39, and is omitted for simplicity from the path diagram.

3.4. Predictive and incremental validity of EI measures

To examine additive contribution of the EI measures in accounting for the variance of students' social adjustment defined by the sociometric status measure, we performed hierarchical regression procedures (Table 5).

Table 5 – Contribution of EI in accounting for sociometric status:
Hierarchical regression procedures

Predictor sets	ß	r	ß¹
1. step: demographic features			
Gender	-0.081	0.044	-0.148**
Age	0.017	-0.080	0.020
GPA	0.626***	0.607***	0.352***
R = 0.613 **R^2 = 0.375*** **			
2. step :			
Emotion management test	0.035	0.043	-0.031
R = 0.614 **ΔR^2 = 0.001**			
3. step : peer-ratings of EI			
Perceiving others' emotions	0.107	0.519***	0.107
Describing emotions (expressing in words)	0.127	0.587***	0.127
Care for others' feelings	0.020	0.443***	0.020
Cheering up others	0.350***	0.601***	0.350***
Settling down (conflict situation in the class)	0.197**	0.607***	0.197**
R = 0.820 **ΔR^2 = 0.295*** ** **cR^2 = 0.654**			

Note. ß¹ - beta weights at the last step of the regression analysis; r – bivariate correlations with the criterion; **p<.01; ***p<.001;

In the first step of the analysis, demographic features, gender and age, along with the measure of school achievement were entered into the regression equation. GPA variable was used here as a rough substitute for general mental aptitude measure bearing in mind the fact on moderately high correlations of cognitive ability measures and school success in the studied population. That model explained highly statistically significant and rather robust amount of criterion variance (37.5%), plainly due to the contribution of GPA (β=.626, p<.001). Emotion management test, entered in the second step, did not add to the criterion variance (ΔR^2 = 0.001, ns). Finally, five peer-rating EI measures, entered together at the third step of the analysis, accounted for additional 29.5% of the sociometric status variance. Significant and reasonably high bivariate correlations are obtained between each of the peer-rating measure and sociometric status, however, two of them, ability to cheer up others (β=.30, p<.001) and the ability to settle down conflict situation in the class (β=.20, p<.01), proved to have significant partial contribution in the multivariate test for the final regression equation. Final model including whole the employed predictor set accounted thus for approximately 65% of criterion variance (R=.820, p<.001).

IV.   CONCLUSIONS

This study adds to the existing body of empirical evidences on the emotional intelligence concept and the quality of the proposed operationalizations intended for younger age groups. The obtained emotional intelligence latent structure examined in the confirmatory factor framework speaks in favour of theoretically proposed distinction between Experiential and Strategic EI dimensions, which appears to be a plausible solution of the overall EI structure in early adolescent age groups, too. Moreover, the observed significant correlation of Emotional management latent variable with Strategic EI and also the insignificant correlation with Experiential EI latent variable present a clear support for the Emotion management test in terms of convergent and discriminant sources of validity evidence, respectively.

Furthermore, the observed structure of gender differences found in EI peer-report and test data are in line with Mayer and Salovey' theoretical implications as well as with previous empirical studies on EI and

related constructs both in adults and adolescent populations. Interestingly, the obtained gender differences apply for the most part to variables fitting in the experiential EI subdimension.

In view of the predictive power of the EI variables used, the results give obvious support for the incremental validity of peer rating EI measures, especially those related to emotional management EI branch. Nevertheless, it should be noted that both the social adjustment criterion measure used, that is, students' sociometric status, and EI ratings are indeed operationalized using the same sources of data, namely students' reports, hence, the possibility of a certain amount of method covariance in the predictor structure described cannot be neglected. Other relevant criterion measures obtained from different and multiple sources should preferably be used in future studies to evaluate the theoretical and practical importance of the peer-report EI instruments administered in this study.

Seemingly odd finding refers to irrelevance of Emotion management test scores in the same predictive equation. Bearing in mind the contribution of peer rated EI scores in this context, and the results of confirmatory factor analysis described above, the lack of predictive value of Emotion management test seems to be mainly due to limitations of this version of the instrument, and its internal structure and consistency, in particular. Refinements of the instrument, for instance, by increasing the number of items and eventually testing different scoring criteria could, therefore, enable better estimate of the predictive utility of the measures of emotional management ability.

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