



ROLE OF EMOTIONAL INTELLIGENCE IN ADOLESCENTS

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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*

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.

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.

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.

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.

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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.

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.

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 as 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.

RESULTS AND DISCUSSION

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.

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

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.

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 =.623 (chi square=81.62,

df=21, and practically significant canonical

discriminant function with Wilks’.

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.

DISCUSSION

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.

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.

CONCLUSION

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.

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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