

ORIGINAL RESEARCH

Adaption and validity of the Trait Emotional Intelligence Questionnaire – Short Form in Greek educational context

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Abstract

Background: In Greek scientific literature, no other studies using emotional intelligence as a personal trait were found. **Objective:** The aim of this study was to explore the validity and reliability of the Trait Emotional Intelligence Questionnaire – Short Form in a Greek educational context. The internal consistency as well as the levels of emotional intelligence, along with the gender as a factor that differentiates emotional intelligence have also been examined. **Methods:** The sample of the study consisted of 306 (for exploratory factor analysis) and 415 (for confirmatory factor analysis) students who attended the 7th, 8th, and 9th grades of high school. The selection of the sample was randomly performed. The scale consists of 30 questions and four factors. The statistical analysis of the data included descriptive statistics, exploratory and confirmatory factor analysis, reliability analysis using Cronbach's α and discriminant/convergent validity, and *t*-test for independent samples. **Results:** The results of the confirmatory factor analysis demonstrated that the hypothesized model produced a significant χ^2 (1026.58), normed fit index (.96) and comparative fit index (.97). The root mean square error of approximation (.78) was also considered to assess the degree extent to which the model of fit of. Composite reliability ($\geq .948$) and average variance extracted ($\geq .751$) of all dimensions of the Trait Emotional Intelligence Questionnaire – Short Form demonstrated an acceptable reliability coefficient. **Conclusions:** From the analysis of the results, we came to the following conclusions. The Trait Emotional Intelligence Questionnaire – Short Form constitutes an instrument credible enough to measure the emotional intelligence of high school male and female students. Gender is a differentiation factor for Total emotional intelligence, Self-control, and Well-being factors.

Keywords: physical education, measurement, teaching, sociability

Introduction

In recent decades, emotional intelligence (EI) has attracted the interest of the scientific community, resulting in the formulation of several theories and dozens of studies by psychologists and sociologists on how EI affects human development and performance. Emotional Intelligence is rooted in the concept of "social intelligence", which was first introduced by Thorndike (1920) who defines it as the ability to understand and manage interpersonal relationships effectively, regardless of age or gender, while always exercising sound judgement.

Mayer and Salovey (1993, p. 433) described EI as "a form of social intelligence, which involves an individual's ability to understand the emotions of both him and others, to make subtle distinctions between different emotions, and to use this information to guide his thoughts and actions accordingly".

The phenomenal success of Goleman's (1995) book *Emotional Intelligence* stirred the waters of international literature and made scientific terminology known to the public. Goldman's central argument boils down to the fact

that EI is one of the major factors in life, with a potentially greater influence than cognitive intelligence on many aspects of human behaviour. Goleman in his book argued that EI is the ability to find motivation for oneself, endure frustrations, control impulses, restrain impatience, regulate mood properly, prevent frustration, and have empathy, vision, and hope. He pointed out that impulsiveness, stability, optimism, and drive are prerequisites for success in professional and personal life (Goleman, 1995).

The concept of EI has been developed in many research areas, mainly because of its potential to influence human performance and relationships in different environments (Stough et al., 2009). It is a key component of human behaviour that acts independently and differently from cognitive intelligence (Bar-On, 2000). It has links to Gardner's interpersonal and intrapersonal intelligence and while its concept has offered a new insight into human intelligence, as it represents the emotional, personal and social dimensions of intelligence, which are more important for everyday activities and interpersonal competitions than the conventional, cognitive dimensions of intelligence. EI is related to the understanding of self and relating to significant others,

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and adapting to their environment, important factors in meeting social and individual demands (Goleman, 1995).

Salovey et al. (1999) found that people with high EI are healthier because they know when and how to express their emotions and they suggested that there is a direct relationship between physical and psychological health. Taylor (2001) argued that when one has developed EI, one can better manage the difficulties that arise in their life, and control one's actions more effectively, as EI skills enhance the brain's ability to cope with all emotional processes. This resilience maintains good immune status and helps to protect against disease (Bradberry & Greaves, 2005). Similarly, Martins et al. (2010), through a meta-analysis of related studies, confirmed the association of EI with better health levels. Through a systematic review of scientific research and with 19,815 participants, they argued that EI is a plausible indicator of health, as it is positively associated with both mental, physical and psychological health.

EI is further associated with several important human values such as quality of interpersonal relationships, higher life satisfaction, a better quality of life and psychological well-being (Delhom et al., 2017). Scientific studies have documented that EI predicts social and academic outcomes (MacCann et al., 2011), school outcomes (Mestre et al., 2006), and perceived family warmth (Ciarrochi, et al., 2001) in children and adolescents. In terms of the workplace, EI predicts greater effectiveness in work environments characterized by high management demands (Farh et al., 2012), success in occupations that involve creativity, leadership, sales, and psychotherapy (Salminen & Ravaja, 2017) and greater workplace satisfaction. People with high EI experience less loneliness, less internet addiction and a better work and life balance. In addition, they are less materialistic and adopt less manipulative behaviour toward others (Sjöberg, 2001). In general, it is associated with factors that bring favourable outcomes and success in life (Qualter et al., 2007).

Petrides and Furnham (2003) defined EI as a personality trait and a set of individuals' perceptions about their ability to recognize process and use emotional information. They view EI as a combination of adaptive abilities and personality traits, defined as the individual's stable dispositions at different times and contexts, rooted in the primary levels of personality structure classification, and referring to the individual's dispositions and self-perceptions related to emotions. Petrides, Pérez-González, and Furnham (2007) defined EI as a personality trait that describes the perceptions of the emotional world: what our emotional dispositions are and how good we think we are at perceiving, understanding, managing and using our own emotions and those of others. In their model, Petrides and Furnham (2001) came up with 15 dimensions that are common to many of the EI models. These dimensions (trait empathy, emotion perception, emotion expression, relationships, emotion management, assertiveness, social awareness, self-esteem, trait optimism, trait happiness, emotion regulation, impulse control, stress management, adaptability, and self-motivation) formed the basis for the creation of their model. The inherent subjectivity of EI is recognized, and

this is the main difference between this model and the EI as a competence model (Mavroveli et al., 2008).

Individuals with high EI as a personality trait are in touch with their emotions and can regulate them in a way that ensures well-being in their lives and according to Petrides and Mavroveli (2018), this model of EI should be clearly distinguished from the model of EI as a competence. Finally, according to Petrides et al. (2007) in their model of EI as a personality trait, EI is a set of personality dispositions, including both personal abilities and traits that help the individual to utilize EI in real life.

Various instruments have been developed to measure EI, either self-report instruments or instruments based on objective measures of individual performance (Ciarrochi & Deane, 2001). Self-report measurement instruments ask individuals to assess their level of EI (Boyatzis et al., 2000). For this reason, the EI resulting from self-report instruments is called perceived EI.

Petrides and Furnham (2001) developed the Trait Emotional Intelligence Questionnaire (TEIQue) which assesses EI as a personality trait. It includes 153 items, in which the examinee is assessed on 15 subscales within the four main factor dimensions: Self-control, Well-being, Emotionality, Sociability; and overall EI. The questionnaire is also available in a shorter version, Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF), that includes 30 statements, which are divided into the four factors mentioned above, as well as in overall EI. Recent studies, when comparing the TEIQue with other, EI assessment instruments, have shown that it is highly scientifically valid. The success of this instrument for measuring EI, given the fact that it is based on self-report, presented in the results of EI as surveys better self-report methods and subjective ratings reliable.

Although studies using the TEIQue-SF of Petrides et al. (2007) were found in Greek literature, these were either sampled by adults (Stamatopoulou et al., 2016) or did not accurately refer to the age of the sample since they simply mentioned Mean, or it was carried out in a single area (Laconia) and their results cannot be used in a different geographical and cultural area such as the Region of Eastern Macedonia and Thrace. So, the aim of this study was to explore the validity and reliability of the TEIQue-SF (Petrides, Pérez-González, & Furnham, 2007) in the Greek language to make it suitable for use in surveys concerning the Greek educational context and more specifically in research with a sample of 7th, 8th and 9th grade students. The internal consistency, as well as the levels of EI, and gender as a factor that differentiates EI, have also been examined.

Methods

Study design and procedures

The absence of a reliable instrument to measure the emotional intelligence of students aged 12–15 years old, was the reason for the authors to deal with this issue. The first step was to seek permission from the questionnaire developers (Petrides, Pérez-González, & Furnham, 2007) to translate and then validate the questionnaire in Greek so that it could be used in the Greek educational system of secondary

education (grades 7–9). The next step was to seek permission from the Ethics Committee of the Democritus University of Thrace and then from the Ministry of Education and Religious Affairs for the researchers to enter the respective schools and conduct the research. After being granted permission by both institutions, the next step was to seek permission from the heads of the schools invited to participate in the research. At this point, it should be emphasized the fact that the survey was conducted at a time when social distancing rules were still in place due to COVID-19 needs to be underlined. This was the reason why both school principals and parents of the students were reluctant to allow the surveys to enter their schools. The time taken to complete the questionnaires was approximately 15 minutes. This time included the time required to provide answers to students' questions as well as to highlight how important their contribution was to the successful outcome.

Participants

For sample selection, the proportional stratified sampling method was chosen, which allows for sample selection in proportions corresponding to the population under investigation. Through this method, the percentage of the sample required from each layer is selected, thus creating a data set that can be safely used to draw conclusions. The method was chosen to better represent each segment of the population, reduce error and have enough participating students from the subpopulations. According to this method, the total population is divided into strata and then individual samples are selected by simple random sampling from each stratum. Strata are generally composed of as homogeneous as possible groups of population elements with common geographical, social and demographic characteristics. According to the principles of proportional stratified sampling, students from high schools of each Regional Unit participated, according to the population ratio, in relation to the total population of the Region of Eastern Macedonia and Thrace.

The sample of the study consisted of 306 (for exploratory factor analysis) and 415 (for confirmatory factor analysis) students who have been attending 7th, 8th, and 9th grades of high schools in the prefectures of Drama, Kavala, Evros, Rhodope and Xanthi. The selection of the sample was randomly done. More specifically, the sample that participated in the exploratory factor analysis consisted of 163 (53.27%) male and 143 (46.73%) female students of which 98 (32.03%) attended the 7th, 105 (34.31%) the 8th grade and 103 (33.66%) the 9th grade of High schools located of the above prefectures. The sample that participated in the confirmatory factor analysis consisted of 217 (52.30%) male and 198 (47.70%) female students of which 117 (28.20%) attended the 7th, 139 (33.50%) the 8th grade and 159 (38.30%) the 9th grade high schools of the same prefectures. Regarding schools' locations, 81 students (26.5%) came from Kavala, 69 (22.5%) from Evros, 57 (18.5%) from Xanthi, 52 (17.1%) from Rhodope and 47 (15.4%) from Drama.

The research was approved by the Ethics Committee of the Democritus University of Thrace and the Greek Ministry of Education. Informed consent was signed by

the parents of the students. The participants were assured of the anonymity and confidentiality of their participation as well as the use of their answers exclusively for scientific purposes.

Instrument

The Greek version of TEIQue-SF (Petrides, Pérez-González, & Furnham, 2007) was used. The questionnaire's translation and adjustment to the Greek language were performed by two professional translators. They followed the methodology proposed by Banville et al. (2000; back-to-back translation) about questionnaires' translation and adjustment to a different social environment from the one used in the beginning.

This 30-item questionnaire is the short version of a previous questionnaire that included 153 questions. Petrides, Pita, and Kokkinaki (2007) accept that emotional intelligence is composed of 15 different aspects based on which they also constructed the questionnaire. For the construction of this short version, they chose two questions for each aspect and in this way, a questionnaire of thirty questions has emerged. The answers are given on a 7-point Likert scale where 1 = *strongly disagree* and 7 = *strongly agree*. Questions 2, 4, 5, 7, 8, 10, 12, 13, 14, 16, 18, 22, 25, 26, and 28 reversed the score, according to the instructions of the questionnaire's manufacturers of the questionnaire, to harmonize them with the direction of the others. Of the thirty questions, twenty-six were divided into four factors. In contrast, four questions (3, 14, 18, and 19) only contribute to the assessment of overall emotional intelligence without participating in the formation of any factor. The four factors are:

1. Sociability, composed of 6 questions (6, 10, 11, 21, 25, 26; e.g., "I can deal effectively with people"), exploring the levels of sociability of the individual, his/her social relationships and the influence he/she has on his/her environment.
2. Self-control, composed of 6 questions (4, 7, 15, 19, 22, 30; e.g., "On the whole, I'm able to deal with stress"), exploring the person's ability to control his/her anger and desires.
3. Emotionality, composed of 8 questions (1, 2, 8, 13, 16, 17, 23, 28; e.g., "I often pause and think about my feelings") examining the levels of being able to understand the feelings of oneself and others and furthermore, being able to express them and use them to develop closer relationships with people in the environment in which one lives and operates
4. Well-being: consisting of 6 questions (5, 9, 12, 20, 24, 27; e.g., "I generally don't find life enjoyable"), examining the person's sense of well-being which comes not only from his/her past successes but also from the dreams and goals he/she has set for the future.

Statistical analysis

Statistical analysis was conducted using IBM SPSS Statistics (Version 26.0; IBM, Armonk, NY, USA) and LISREL (Version 8.80; Scientific Software International, Chapell Hill, NC, USA) software packages. The statistical analysis of

the data included descriptive statistics calculated to broadly examine the degree of emotional intelligence, exploratory and confirmatory factor analysis to test the validity and reliability of the questionnaire, reliability analysis to check the internal consistency of the factors using Cronbach's α and discriminant/convergent validity, and t -test for independent samples was used for the comparison of values between male and female students. We did not conduct the Bonferroni correction because we did not conduct multiple analyses on the same dependent variable.

Two steps must precede an exploratory factor analysis. The first is to check the suitability of the data for inclusion in the factor analysis. This check is carried out by considering the values of the Kaiser-Meyer-Olkin and Bartlett's test of sphericity. Small values of the index, $<.60$, indicate that factor analysis is not an appropriate technique for the data. The second step aims to investigate the suitability of the variables for inclusion in the proposed factor model. This check is carried out by considering the value of the measure of sampling adequacy. According to Hair et al. (2019), values between $.80$ and $.90$ are the most appropriate, values between $.60$ and $.70$ are acceptable, while values $\leq .50$ should be deleted and not participate in further analysis.

Confirmatory factor analysis was conducted to confirm or reject the proposition (theory) of Petrides, Pita, and Kokkinaki (2007) that four factors make up the TEIQue-SF as well as the number of variables involved in the formation of each factor. The estimator method used was the maximum likelihood. The fit indices that have been considered and their acceptable values are the following: minimum discrepancy divided by the degrees of freedom (χ^2/df) < 5 , root mean square error of approximation (RMSEA) $< .08$, standardized root mean square residual $< .05$, and incremental indices comparative fit index $> .90$, normed fit index and parsimony normed fit index $\geq .60$.

The control of the internal consistency of the factors was performed using the indices Cronbach's α and composite reliability (Hair et al., 2019). The reliability of the factor is acceptable when the index takes values $\geq .70$. To assess the discriminant and convergent validity the average variance extracted index was considered. Values of $\geq .50$ are considered as acceptable.

Results

Suitability of data and variables

The results reflected that the statistical criterion of Kaiser-Meyer-Olkin is remarkably high, (.932). Furthermore, Bartlett's test of sphericity rejects the zero hypotheses that the correlation's table is the unitary one (the value of control function 9074.973, $df 325$ and $p < .001$). Data analysis indicated that the survey's data are suitable for factor analysis.

Concerning the measure of sampling adequacy, according to the results, all the indicators are within the limits of the criteria above, the index ranges between $.882$ ("I often pause and think about my feelings"), and $.966$ the highest ("I'm usually able to influence the way other people feel"; Hair et al., 2019).

Exploratory factor analysis

Twenty-six questions relating to emotional intelligence are exploratory factors analyzed using a principal component analysis solution with direct oblimin rotation. The analysis yields four factors explaining a total of 81.10% of the total variance.

The 1st factor Emotionality explains 48.51% of the total variance and contains eight items. The factor examines the levels of whether one can perceive the emotions of both one and others. Furthermore, being able to express and use them to develop closer relationships with people in the environment in which one lives and operates yields a subscale score of 4.36 ± 0.88 . The 2nd factor Self-control accounts for 14.20% of the total variance, comprises six items, explores the individual's ability to control his/her anger and desires, and yields a subscale score of 4.34 ± 1.14 . The 3rd factor Well-being explains 9.50% of the total variance and contains six items and looks at the sense of well-being that the individual has which comes not only from past successes but also from the dreams and goals he/she has set for the future. This factor yields a subscale score of 4.81 ± 1.06 . The 4th factor Sociability explains 8.89% of the total variance and comprises six items, explores the levels of sociability of the individual, his/her social relationships, and the influence he/she exerts on his/her environment and yields a subscale score of 4.36 ± 1.01 (Table 1).

Reliability analysis

The internal consistency of the factors was tested considering Cronbach's α . As shown in Table 1, the internal consistency of all four factors is considered particularly high since the index obtained values from $.905$ (sociability) to $.938$ (emotionality).

Confirmatory factor analysis

Suitability of data and variables

A confirmatory factor analysis was performed on the 26 items of the Greek version of TEIQue-SF since, according to the statistical criterion measure of sampling adequacy, they showed values between $.80$ and $.90$ ($.861$ is the lowest and $.951$ is the highest). The method of estimating parameters is that of maximum likelihood. The hypothesized model consists of four latent variables, namely Emotionality, Self-control, Well-being, and Sociability.

The results of the confirmatory factor analysis demonstrated that the hypothesized model produced a significant $\chi^2/df(1026.58/293) = 3.50$, $p = .02$. The normed fit index, comparative fit index and goodness of fit index were found to be $.96$, $.97$, and $.84$ respectively. The RMSEA was also considered to assess the degree of fit of the model. The RMSEA value for the hypothesized model was found to be $.078$, standardized root mean square residual = $.027$ and parsimony normed fit index = $.88$.

Composite reliability and average variance extracted

All factors showed particularly good reliability since the CR index takes values from $.97$ (emotionality) to $.948$ (self-control and sociability). In terms of discriminant and convergent validity, the average variance extracted index

Table 1 Characteristics of exploratory factor analysis

Item	Factors and factors' loading			
	Emotionality	Self-control	Well-being	Sociability
1 Expressing my emotions with words is not a problem for me	.911			
2 I often find it difficult to see things from another person's viewpoint	.916			
8 Many times, I can't figure out what emotion I'm feeling	.909			
13 Those close to me often complain that I don't treat them right	.900			
16 I often find it difficult to show my affection to those close to me	.889			
17 I'm normally able to "get into someone's shoes" and experience their emotions	.897			
23 I often pause and think about my feelings	.917			
28 I find it difficult to bond well even with those close to me	.929			
4 I usually find it difficult to regulate my emotions		.910		
7 I tend to change my mind frequently		.909		
15 On the whole, I'm able to deal with stress		.907		
19 I'm usually able to find ways to control my emotions when I want to		.909		
22 I tend to get involved in things I later wish I could get out of		.916		
30 Others admire me for being relaxed		.922		
5 I generally don't find life enjoyable			.890	
9 I feel that I have several good qualities			.894	
12 On the whole, I have a gloomy perspective on most things			.874	
20 On the whole, I'm pleased with my life			.885	
24 I believe I'm full of personal strengths			.898	
27 I generally believe that things will work out fine in my life			.842	
6 I can deal effectively with people				.889
10 I often find it difficult to stand up for my rights.				.890
11 I'm usually able to influence the way other people feel				.887
21 I would describe myself as a good negotiator				.868
25 I tend to "back down" even if I know I'm right				.888
26 I don't seem to have any power at all over other people's feelings				.887
Total variance 81.10%				
Eigenvalues	12.61	3.69	2.47	2.31
Variance %	48.51	14.20	9.50	8.89
Cronbach's α	.938	.929	.917	.905
<i>M</i>	4.36	4.34	4.81	4.36
<i>SD</i>	0.88	1.14	1.06	1.01

showed satisfactory values for the seven factors, from .751 for Self-control and Sociability to .799 for Emotionality (Table 2).

Differences according to gender

To check whether there were statistically significant gender differences, five *t*-tests for independent samples were performed. The results indicated that statistically significant differences between male and female students were observed in Total emotional intelligence ($t(413) = 4.38$, $p = .002$), Self-control ($t(413) = 2.39$, $p = .34$) and Well-being ($t(413) = 5.85$, $p = .002$) factors. More specifically, in Total emotional intelligence male students presented a higher mean (4.50 ± 0.64) than female (4.28 ± 0.70), in Self-control male students presented a higher mean (4.28 ± 1.09) than females (4.02 ± 1.13), and in Well-being male students presented a higher mean (5.09 ± 1.18) than females (4.49 ± 0.88), see Table 3.

Discussion

The present study aimed to examine the structural validity of the most used instrument for EI as a personality trait, the TEIQue-SF, in a sample of high school students from

the Region of Eastern Macedonia-Thrace. The reason for choosing this questionnaire was that it has been used with great success in many studies around the world. Another reason is that short versions of comprehensive questionnaires are important for research in practice settings where time constraints prohibit the use of longer versions.

Although the TEIQue-SF has been used for research in the adult Greek population (Stamatopoulou et al., 2016), no study using the TEIQue-SF in adolescent students was found. In line with the results of good adaptation of the TEIQue-SF in a Chinese (Feher et al., 2019) and Spanish sample (Laborde et al., 2016), the authors expected similar behaviours in the Greek sample.

The adaptation and weighting of the TEIQue-SF to the Greek student population attending secondary school were achieved through the conduct of two separate surveys. The first one aimed at producing the questionnaire in Greek through the conduct of an exploratory factor analysis. The second one aimed to confirm the structural validity of the questionnaire by conducting a confirmatory factor analysis.

The exploratory factor analysis brought to the fore the four factors suggested by the questionnaire developers. The composition of the four factors is the same as in the original questionnaire with four questions participating only in the

calculation of total emotional intelligence. The results of the exploratory factor analysis were verified by the results of the confirmatory factor analysis which confirmed the structure of the four factors making the Greek version of the TEIQue-SF valid and reliable. The results of the survey agree with the results of both the questionnaire constructors – Petrides, Pita, and Kokkinaki (2007) – and the results of other studies such as those of Jacobs et al. (2021), Di Fabio et al. (2016) in Italy, and Merino-Tejedor et al. (2018) in Spain. The results of these studies establish and confirm the distribution of the 26 questions across four factors and the contribution of four questions only to the calculation of total emotional intelligence as a personality trait.

The results of the factor analysis (both exploratory factor and confirmatory factor analysis) are confirmed by the results of the internal consistency test of both the four

factors and the entire questionnaire. All three indicators tested received particularly high values. The results of the present study are consistent with the results of the questionnaire constructors as well as those of other studies such as those in Zuanazzi et al. (2022) and Al Hosani et al. (2020). More specifically, in Zuanazzi et al. (2022) the Cronbach's α was between .76 and .90 for the factors and global score while in that Al Hosani et al. (2020) from .70 to .87 for the factors and global score.

Regarding gender as a differentiating factor of emotional intelligence, according to the results of the study, gender is a differentiating factor for total emotional intelligence as well as for Self-control and Well-being factors, with boys scoring higher than girls. Considering the results of other studies, it should be emphasized that there is no consensus among the studies regarding the gender differentiation of emotional intelligence. In many studies – Aithal et al. (2016), Ruiz and Carranza Esteban (2018), Sati and Gir (2016) – girls score higher on both emotional intelligence and its sub-scales. In contrast, in the studies by Gomez-Baya et al. (2017) and Salavera et al. (2019), boys score higher. The conflicting results are likely to be due, according to Siegling et al. (2015), to both social and biological factors but, most importantly, to the different instruments used to measure EI.

Perhaps on the other hand, closer to reality are the results of Abe et al. (2018) research according to which women show higher scores on the Emotionality and Sociability factors and men on Well-being. The authors express this view considering the tendency observed for girls to be encouraged to be more emotional, more cooperative and to express themselves more easily. In contrast, boys from a young age are trained to be more competitive and independent (Petrides & Furnham, 2006).

As mentioned above, EI is one of the most important factors in individual development and progress, with probably a greater impact, even than cognitive intelligence, on many aspects of human behaviour. According to Goleman's view (1995), which is adopted by the authors, EI is the driving force that will push the individual to withstand possible disappointments, to control impulsive actions and impatience. Furthermore, to regulate his mood properly, not to be overwhelmed by disappointment, and to have empathy, vision and hope since impulsiveness, stability, optimism and dynamism are prerequisites for a successful professional and personal life. The transition from primary school to secondary school is a process that causes intense stress for students in terms of their relationships with their new classmates as well as the increased volume of their

Table 2 Factors' composite reliability and average variance extracted

Item	Factors' loading	Composite reliability	Average variance extracted
Emotionality		.970	.799
1	.90		
2	.90		
8	.90		
13	.88		
16	.87		
17	.88		
23	.91		
28	.91		
Self-control		.948	.751
4	.87		
7	.86		
15	.86		
19	.86		
22	.87		
30	.88		
Well-being		.952	.769
5	.88		
9	.87		
12	.88		
20	.88		
24	.88		
27	.88		
Sociability		.948	.751
6	.87		
10	.88		
11	.86		
21	.85		
25	.87		
26	.87		

Table 3 Differences according to gender

Factor	Total		Male students		Female students		t(413)	p
	M	SD	M	SD	M	SD		
Emotionality	4.45	0.88	4.49	0.72	4.42	1.02	0.771	.44
Self-control	4.16	1.12	4.28	1.09	4.02	1.11	2.39	.02
Well-being	4.80	1.09	5.09	1.08	4.49	0.88	5.85	.02
Sociability	4.39	1.01	4.40	0.98	4.38	1.02	0.165	.87
Total emotional intelligence	4.40	0.68	4.50	0.64	4.28	0.70	4.38	.02

school obligations. One of the subjects in the school curriculum that can contribute to the students' discharge is physical education. Physical education is an important area for the development not only of students' sports-motor skills but also of good physical-mental and mental health.

According to Ouyang et al. (2020):

Body image, self-efficacy, and self-esteem had significant influence on sports participation in college students. At the same time, the mediating effect of self-efficacy, self-esteem, and self-efficacy-self-esteem on body image and sports participation were established, and self-esteem was the key factor to sports participation. (p. 1)

Thus, the Physical Education teacher now has a reliable instrument to measure EI as a personality trait rather than a skill. A reliable assessment instrument whose dominant feature is the self-assessment of Emotional Intelligence by the students themselves, which is considered by Tirri (2011) superior as an instrument to a teacher's or anyone else assessment. It is therefore suggested that PE teachers use it to assess the EI of their students to be able to implement programs either to maintain good levels of already existing EI or to improve some possible low levels. Improving levels of EI will help students cope with the difficulties of their school commitments.

In this research, we consider the following limitations:

- Only students aged 12–15 years took part in the study.
- The study was conducted exclusively with students who permanently reside in a specific geographical and cultural region (Region of Eastern Macedonia and Thrace).
- The sample was religiously heterogeneous – Christian Orthodox and Muslims – just like the populations residing in the region of Eastern Macedonia and Thrace.
- Investigating EI as a personality trait is only one aspect of EI and is likely to differ from the data that would be derived from investigating EI as a skill.

Conclusions

The TEIQue-SF constitutes an instrument credible enough to measure the emotional intelligence of high school male and female students. Gender turns out to be an element that differentiates the factors of Total emotional intelligence, Self-control and Well-being with males scoring higher than female students.

Conflict of interest

The authors report no conflict of interest.

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