Nine Layer Pyramid Model Questionnaire for Emotional Intelligence

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Abstract—Emotional intelligence is significant, and it is an integral key to successful intrapersonal and interpersonal relationships. High emotional intelligence strengthens individuals with additional abilities and skills necessary in personal and working life. This study aims to develop Nine Layer Pyramid Model Questionnaire, a reliable and valid measurement instrument of emotional intelligence, based on the theoretical nine-layer pyramid model of emotional intelligence which illustrates hierarchically the abilities and skills that people need to possess to reach the top of emotional intelligence. Models of emotional intelligence and literature on it were investigated, and tool with 81 items was developed. The question items were in full correlation with the levels of the pyramid model. Data were collected through self-reports from 520 teachers from primary and secondary school grade. Results via statistical analysis indicated that the scale is a reliable and valid instrument in measuring emotional intelligence and showing which level they have achieved better and at which level improvements are needed.

Keywords—Emotional intelligence, measurement of emotional intelligence, nine-layer pyramid model, validity, reliability

1 Introduction

1.1 Emotional intelligence, models, and measurements

Emotional Intelligence or EQ has become extremely popular both in the scientific world and in the public. Emotional intelligence has been linked to a wealth of research, many of them showing its positive correlations in many areas such as academic achievement [1,2] psychological well-being [3,4], stress [5,6], personality [7], social relationships [8,9], workplace [10,11] leadership [12,13], health [14], education [15].

Despite its higher impact, there is much debate about the content of this concept, its competencies, and its best way to measure it. Emotional intelligence is not a new term, and many researchers have tried to reformulate older and more recent theories to better approach it. Furthermore, multiple models of EQ and measurements of it have been advocated. Despite the different perspectives, emotional intelligence seems to offer useful insights into the convoluted and complex inner worlds of human beings.

Research on emotional intelligence has been divided into three distinct areas of perspectives in terms of conceptualizing emotional competencies and their measurements. There is the ability EI model [16], the mixed models [17-19], and the trait EI model [20,21].

The difference between the EI models stems from the way of conceptualization, measurement, and assessment of the EI. Various psychometric tools have been developed to measure emotional intelligence, which are based on the theoretical models. These psychometric tools are classified into three categories; 1) Self-reports: These are suggestions-statements that are granted to those interested in the form of a questionnaire. The participants are carefully reading the suggestions-statements and are asked to choose the degree to which they agree or disagree with what it is presented in the sentence-declaration according to the five-point or seven-point Likert scale [22]. The self-report method is mainly used by mixed models and trait models. 2) Other Reports: These are again suggestions-statements in the form of a questionnaire. The difference is that in this case other people (from the familial and social environment) are asked to complete the sentences-statements that concern the abilities and characteristics of a person that they know. A representative questionnaire is that of Goleman and Boyatzis. 3) Objective measurement of skills: That measurement involve answers to questions or solutions to problems and scored according to the answer - solution given since each question - problem has only one correct answer and the answers - solutions are sorted and are calibrated in terms of their correctness by experts. Ability models mainly belong to this category. Perez et al. (2005), present a complete overview of ability EI measures and trait - mixed EI measures, along with basic information about their reliability, validity and factor structure provided [23].

Recent worth noting efforts have also been made to develop reliable and valid measurement instruments of emotional intelligence. One to mention is TIE [24], an ability test and TYEIS [25], a test based on mixed model.

The aim of this paper is to introduce a new instrument, labeled the Nine Layer Pyramid Model Questionnaire for Emotional Intelligence. The development of this questionnaire is attributed to our belief that it is legitimate and worthwhile to construct new questionnaires in the scientific world to assess emotional intelligence based on a theoretical model. The already constructed questionnaires of any kind are remarkable and are the best springboard for the creation of new ones for research and diagnostic purposes. It is encouraging to develop and validate measuring instruments considering different cultural groups and cultures as these two factors influence the experience and expression of emotions [26].

2 Nine Layer Pyramid Model Questionnaire of Emotional Intelligence: Creation, Competencies, and Objectives

In Drigas & Papoutsi (2018) a thoroughly presentation was made of the pyramid of Emotional Intelligence as an attempt to create a new layer model based on emotional, cognitive, and metacognitive skills [27].

The idea was stemmed from the previous important theories of emotional intelligence. The model of emotional intelligence has been created with a distinct classification. Each level includes specific skills that the individual must have acquired to possess

that level of emotional intelligence and then be able to ascend to the next higher level. It is a methodology for the further development and evolution of the individuals. We analyzed the levels of our pyramid step by step, their characteristics, and the course of their development to conquer the upper levels, transcendence, and emotional unity, as well as pointing out the significance of EI in our life.

Most of the emotional intelligence abilities and skills that are layered in the pyramid model have their origins in the three distinct and basic categories of models (Ability model, Mixed models, Trait model). Some more abilities, skills were added to be prioritized according to their contribution to the best stratification of all levels. If we were allowed an approach to the concept of emotional intelligence from our perspective, it would be the followed: *"Emotional intelligence is a set of abilities and skills that a person must train and develop gradually and hierarchically to reach emotional self-realization. It is the response to emotional stimuli, the recognition – expression of emotions, the full awareness and management of our own emotions but also the emotions of others, the social skills for better intrapersonal, interpersonal and working relationships, the empathy and compassion, the accurate discrimination of emotions with the ultimate aim of the emotional development of our potential, self – actualization, transcendence and finally the unity of emotions because humans are part of a united world"*. The development of emotional intelligence is not a static process, but a continuous effort to evolve to reach higher levels for better balance with ourselves and those around us, better mental and physical health, and more success. In summary, the nine stages of the pyramid of emotional intelligence are the following [27]:

Emotional stimuli: The emotional stimuli constitute the base of the pyramid where people can classify each emotional stimulus with accuracy to rapidly assess the emotional situation, to produce emotional changes [28] and connected to conscious awareness, even if it is an early stage [29,30].

Emotion Recognition, Perception-Expression of Emotions: The expression of emotions is a daily [31] and desirable condition for our own emotional state, but also for the emotional state of others. Furthermore, the ability to perceive and recognize emotions, verbally or not verbally, is critical, with research showing that vital information can be inferred from facial expressions [32-34].

Self-Awareness: The third level of the model of EI, the self-awareness one, is a holistic approach to ourselves for better development at all levels, social, professional, [35,36] interpersonal, intrapersonal. It is a psychological state in which oneself becomes the focus of attention.

Self-Management: In the level of self-management, the more you learn to manage your emotions and have self-control, the greater your ability will be to articulate them in a productive way [37]. Mischel et al., (2014) refer to emotional self-management as an intrapsychic process and an attempt to inhibit impulsive emotional reactions to achieve future goals [38].

Social-Awareness, Empathy, Discrimination of Emotions: Social awareness refers to the awareness of others' emotions, needs, and concerns [18]. Moreover, with empathy, one can understand the feelings and thoughts of others taking their perspective [39]. Discrimination of emotions is also an ability to discriminate with accuracy and in detail between different emotions, to label them appropriately, to select among various emotionally charged situations for better choices and decisions [40].

Social Skills, Expertise in Emotions: Social skills are a prerequisite for socialization, and individualization, because these skills help gaining more knowledge about ourselves and others, which contributes to better social interactions and to the configuration of self-concept [41] Expertise in emotions could be characterized as the ability to increase sensitivity to emotional parameters and strategically expose one's own emotions and respond to emotions stemming from others [42].

Universality of Emotions, Self-Actualization: Self-Actualization is to realize and achieve your potential capacities [43], and to reach self-fulfillment in the most creative and effective way. Various authors have defined self-actualization as a life-long process [44], a way of living [45] and a challenge [46]. Self-actualization leads to the universality of emotions by understanding the difference of emotions and their meanings in other cultures too even though sometimes emotions are culturally dependent [47].

Transcendence: In the level of Transcendence, one helps others to self-actualize, find self-fulfillment, and realize their potential [48,49]. Stellar et al. (2017) propose a taxonomy of self-transcendent positive emotions which are classified into three broader branches: the emotion of awe and relevant emotions of moral elevation, inspiration, and admiration; compassion and related emotions of sympathy, love, and pity; and gratitude and the related emotion of appreciation [50].

Emotional Unity: Emotional unity is the final level in the pyramid of emotional intelligence. Emotions have an outstanding place in our lives because they influence them, they make changes, they formulate situations [51]. The most important thing is to perceive that we are all interconnected with other people, with the nature and the whole planet. Researchers of emotions are explaining the unity or oneness of emotion [52].

3   Materials and Methods

In this present study, the Nine Layer Pyramid Model Questionnaire of Emotional Intelligence was constructed to measure emotional intelligence and assess the possession of each level of the pyramid model through self-report. The questionnaire was based on the model of the emotional intelligence pyramid and all the questions are related to the nine levels. It was designed taking account of existing abilities and skills through known models of EI with detailed examination of them (Ability model, Bar-On model, Goleman model, Trait model) and with the addition of some more competencies.

The Nine Layer Pyramid Model Questionnaire of Emotional Intelligence was developed for adults. Specifically, in the research it was granted to teachers of primary and secondary education to detect their overall emotional intelligence, and in which of the nine levels of the pyramid model a bigger or smaller percentage is observed. The educational field was chosen so that there is uniformity in the sample and because it is important for teachers to have emotional intelligence since they are surrounded by pure child souls. Access to the questionnaire was anonymous to encourage honest responses and none of the questions identified the respondents in any way.

Aim of the research: This study aims to quantify the emotional intelligence and investigate its dependency with the demographic characteristics of the participants. The

goal was to develop a valid and reliable instrument tapping multidimensional construct of EI.

Research hypotheses: For the inferential part of the analysis, the following six hypotheses were tested:

1. Gender plays an important role in the levels of Emotional Intelligence.
2. Years of experience as a teacher are correlated positively with Emotional Intelligence.
3. Age is correlated positively with Emotional Intelligence.
4. There are no significant differences on Emotional intelligence based on educational level or training in special needs education.
5. There are no significant differences on Emotional intelligence based on the school grade the teachers are responsible for.
6. Special Education Relevance has an important role in the levels of Emotional Intelligence.

Research tool: The research tool (Nine Layer Pyramid Model Questionnaire of Emotional Intelligence) is consisted of 81 questions measuring different layers of Emotional Intelligence pyramid model. Answers were given on a 5-point Likert scale (1- Totally Disagree, 2- Disagree, 3-Neutral, 4-Agree, 5-Totally Agree) with higher average values representing higher emotional intelligence. The questionnaire was divided in 9 dimensions (9 questions each) each representing an Emotional intelligence layer. Cronbach's Alpha were acceptable for all subscales except for Emotional Recognition where the results were borderline. The Cronbach's Alpha for the 9 subscales is presented below in Table 1.

Table 1. Cronbach's Alpha for Emotional Intelligence subscales

Score	Cronbach's Alpha	N of Items
Emotional Stimuli	0.788	9
Emotion Recognition	0.637	9
Self-Awareness	0.776	9
Self-Management	0.700	9
Social-Awareness	0.853	9
Social Skills	0.835	9
Universality of Emotions	0.876	9
Transcendence	0.859	9
Emotional Unity	0.885	9
Emotional Intelligence	0.961	81

Sample: Sample demographics are presented in Table 2. The sample consists of 520 participants, 129 males (24.8%) and 391 females (75.2%). Most of the respondents were between 45 and 54 years old (43.5%) and between 34 and 44 years old (20.6%). Regarding education most participants had a master's degree (48.3%), followed by those with a Bachelor's degree (47.1%) and a minority with PhD titles (4.6%). Furthermore, participants were mainly elementary school teachers (46.2%). Regarding working experience, 41.3% were working for longer than 20 years in education. A total of 107 (20.6%) participants had degrees which are relevant with special needs education, with most of those degrees being Master's degrees (70.1%).

Table 2. Sample Demographics (N=520)

Questions	N	Percentages
Gender		
Male	129	24.8%
Female	391	75.2%
Age		
25-34	86	16.5%
35-44	107	20.6%
45-54	226	43.5%
Over 55 years	101	19.4%
Educational Level		
University Degree	245	47.1%
Master's Degree	251	48.3%
PhD Title	24	4.6%
School Grade		
Primary (kindergarten)	81	15.6%
Primary (elementary)	240	46.2%
Secondary	199	38.3%
Years of working experience		
1-10	107	20.6%
11-20	198	38.1%
20+	215	41.3%
Special Education Relevance		
No	413	79.4%
Yes	107	20.6%
If yes, which degrees are Relevant		
Bachelor's Degree	27	25.2%
Master's Degree	75	70.1%
Both Bachelor's Degree and Master's Degree	4	3.7%
PhD Title	1	0.9%

Statistical methods: To investigate the six hypotheses of this study, a series of inductive tests were applied to the date. More specifically, for the 1st, 4th, 5th and 6th hypothesis, the parametric T-tests and one-way ANOVA were conducted. The choice of tests was based on Central limit theorem in regard to the sufficiently large sample size. T-tests were used where the grouping factor was dichotomous and one-way ANOVA when it had 3 or more values. For the 2nd and 3rd hypothesis the Pearson's Correlation coefficient test was conducted since age and years of experience were ordinal. The Pearson correlation coefficient measures linear relationships between variables.

4 Results

Emotional Intelligence Scale: In order to present the emotional intelligence scale, a total of 10 new variables were created by averaging the questions in each dimension. Additionally, a discrete score measuring the entire Emotional Intelligence scale deriving from all 81 questions. Some of the statements were reverse coded where it was appropriate, to create interpretable scores. Table 3 presents the means, standard deviations, as well as the Cronbach's Alpha for each dimension. The highest scores on

average were reported for Universality of Emotions (M = 4.34), while the lowest were reported for Self-Management (M = 3.55). There were no missing data as the structure of the questionnaire did not allow submission without full completion.

Table 3. Means, standard deviations and Cronbach's Alpha for EI scales and subscales

	Mean	Std. Deviation	N of Questions	Cronbach's Alpha
Emotional Stimuli	4.05	0.491	9	0.788
Emotion Recognition	3.99	0.397	9	0.637
Self-Awareness	4.01	0.484	9	0.776
Self-Management	3.55	0.513	9	0.700
Social-Awareness	4.15	0.486	9	0.853
Social Skills	4.00	0.491	9	0.835
Universality of Emotions	4.34	0.506	9	0.876
Transcendence	4.16	0.547	9	0.859
Emotional Unity	4.17	0.578	9	0.885
Emotional Intelligence	**4.05**	**0.393**	**81**	**0.961**

It was subsequently tested whether the first and second highest scores for each group of school grade were similar. For teachers of kindergarten Universality of emotions and Social-Awareness were the 2 highest dimensions, while for elementary teachers as well as teachers of secondary education, Universality of emotions and Emotional Unity were the two highest layers of EI.

1st Hypothesis: A total of 10 T-tests were conducted that revealed 5 statistically significant results. The detailed T-test results and mean differences are presented in Table 4. Test results showed a significant effect of gender was upon Emotional Stimuli ($t(518) = -3.217$, $p = 0.001$), upon Emotional Recognition ($t(518) = -3.786$, $p < 0.001$) upon Universality of Emotions ($t(518) = -2.086$, $p = 0.038$), upon Transcendence ($t(518) = -2.017$, $p = 0.044$) and upon the totality of Emotional Intelligence ($t(518) = -1.996$, $p = 0.047$) . For all the significant differences, female teachers always reported higher scores compared to males.

Table 4. P-values and mean differences of EI between male and female teachers

Mean differences	Males	Females	P-value (Gender)
Emotional Stimuli	3.93	4.09	0.001
Emotion Recognition	3.88	4.03	0.000
Self-Awareness	3.96	4.02	0.170
Self-Management	3.62	3.53	0.086
Social-Awareness	4.09	4.18	0.086
Social Skills	3.96	4.02	0.226
Universality of Emotions	4.26	4.37	0.038
Transcendence	4.05	4.19	0.044
Emotional Unity	4.13	4.19	0.278
Emotional Intelligence	**3.99**	**4.07**	**0.047**

2nd and 3rd Hypothesis: To answer the 2nd and 3rd hypothesis, the Pearson correlation coefficient test was used (see Table 5). A total of 20 tests, revealed 5 statistically significant correlations. Age had Significant correlations with Self-Awareness ($r = +0.152$, $p < 0.001$) with Self-Management ($r = 0.107$, $p = 0.014$) and with the total of Emotional Intelligence ($r = 0.092$, $p = 0.036$). The correlations' intensity is considered "weak" and were all positive, indicating that as age increases, so does Emotional intelligence. Furthermore, the years of teaching experience had significant correlations with Self-Awareness ($r = 0.142$, $p = 0.001$) and Self-Management (Pearson, $r = 0.132$, $p = 0.002$). The intensity is again considered "weak"and all correlations were all positive, indicating that more experience teachers tend to have higher Emotional intelligence.

Table 5. Pearson correlation coefficients for EI, Age and Years of teaching (N = 520)

Pearson Correlation Coefficients	Age	Years of teaching
Emotional Stimuli	0.056	0.039
Emotion Recognition	0.065	0.053
Self-Awareness	0.152**	0.142**
Self-Management	0,107*	0.132**
Social-Awareness	0.027	0.013
Social Skills	0.078	0.054
Universality of Emotions	0.053	0.028
Transcendence	0.057	0.066
Emotional Unity	0.059	0.069
Emotional Intelligence	0.092*	0.085

4th Hypothesis: A total of 10 t-tests were performed for differences on EI between teachers with special needs degree relevance, and those without. Results revealed 4 significant differences (see Table 6). Results showed a significant effect upon Special needs degree relevance upon Emotional Stimuli (T-test, $t(518) = 2.343$, $p = 0.020$), upon Emotional Recognition (T-test, $t(518) = 3.091$, $p = 0.002$) upon Self-Awareness (T-test, $t(518) = 2.389$, $p = 0.017$) and upon the total Emotional Intelligence (T-test, $t(145) = 2.164$, $p = 0.032$). In all cases, teachers with training in Special needs education reported higher EI scores.

Table 6. P-values and mean differences of EI based on Special Education Relevance

Mean differences	Degree with Relevance	No Relevance	P-value (Special Education Relevance)
Emotional Stimuli	4.15	4.02	0.020
Emotion Recognition	4.10	3.97	0.002
Self-Awareness	4.11	3.98	0.017
Self-Management	3.65	3.52	0.051
Social-Awareness	4.23	4.14	0.089
Social Skills	4.05	3.99	0.287
Universality of Emotions	4.41	4.33	0.187
Transcendence	4.24	4.14	0.136
Emotional Unity	4.25	4.15	0.135
Emotional Intelligence	4.13	4.03	0.032

Additionally, a total of 10 one-way ANOVA tests were performed for differences on Emotional Intelligence between the different educational levels of teachers (Table 7). The results revealed 7 significant differences. There was a significant effect of Educational level upon Emotional Stimuli ($F_{(2,517)} = 3.242$, $p = 0.040$), Self-Awareness ($F_{(2,517)} = 4.639$, $p = 0.010$), Self-Management ($F_{(2,517)} = 5.44$, $p = 0.005$). Social Skills ($F_{(2,517)} = 4.483$, $p = 0.012$). Transcendence ($F_{(2,517)} = 3.778$, $p = 0.024$). Emotional Unity ($F_{(2,517)} = 4.078$, $p = 0.017$) and total Emotional Intelligence ($F_{(2,517)} = 5.518$, $p = 0.004$). For all significant results, participants with PhD reported the highest Emotional intelligence levels, followed by those with a Master's Degree and lastly those with a Bachelor's degree that had the lowest scores, indicating that EI is higher in people with higher educational levels.

Table 7. P-values and mean differences of EI based on Educational Level

Mean differences	Bachelor's	Master's	PhD	P-value (Educational Level)
Emotional Stimuli	3.99	4.09	4.17	0.040
Emotional Recognition	3.95	4.04	3.96	0.053
Self-Awareness	3.94	4.06	4.12	0.010
Self-Management	3.47	3.61	3.66	0.005
Social-Awareness	4.11	4.18	4.25	0.178
Social Skills	3.94	4.04	4.20	0.012
Universality of Emotions	4.29	4.38	4.46	0.092
Transcendence	4.09	4.22	4.25	0.024
Emotional Unity	4.10	4.23	4.31	0.017
Emotional Intelligence	3.99	4.09	4.15	0.004

5th Hypothesis: To investigate the differences on Emotional Intelligence between the different school grades the teachers are responsible for, once again 10 one-way ANOVA tests were performed (Table 8). The results revealed only 1 statistically significant difference, as for the Emotional Recognition ($F_{(2,517)} = 4.438$, $p = 0.012$). Kindergarten teachers appear to have a higher score of Emotional Recognition, followed by the elementary teachers, while the secondary teachers had the lowest score.

Table 8. P-values and mean differences of EI based on School Grade

Mean differences	Primary (kindergarten)	Primary (elementary)	Secondary	P-value (School Grade)
Emotional Stimuli	4.15	4.03	4.03	0.138
Emotional Recognition	4.08	4.01	3.94	0.012
Self-Awareness	4.08	3.98	4.01	0.255
Self-Management	3.57	3.55	3.54	0.947
Social-Awareness	4.24	4.12	4.16	0.171
Social Skills	4.09	3.97	4.00	0.148
Universality of Emotions	4.34	4.30	4.40	0.124
Transcendence	4.22	4.13	4.17	0.470
Emotional Unity	4.20	4.13	4.21	0.345
Emotional Intelligence	4.11	4.02	4.05	0.253

6th Hypothesis: Once again, a total of 10 T-tests were conducted that revealed 4 statistically significant results, as presented in Table 9. Test results showed a significant effect of Special Education Relevance upon Emotional Stimuli (T-test, t = 518, p = 0.020), Emotional Recognition (T-test, t = 518, p = 0.002), Self-Awareness (T-test, t = 518, p = 0.017), and upon the totality of Emotional Intelligence (T-test, t = 145, p = 0.032). For all the significant differences, teachers with a special education relevance seem to have a higher mean, hence a higher score.

Table 9. P-values and mean differences of EI based on Special Education Relevance

Mean differences	No	Yes	P-value (Special Education Relevance)
Emotional Stimuli	4.02	4.15	0.020
Emotional Recognition	3.97	4.10	0.002
Self-Awareness	3.98	4.11	0.017
Self-Management	3.52	3.65	0.051
Social-Awareness	4.14	4.23	0.089
Social Skills	3.99	4.05	0.287
Universality of Emotions	4.33	4.41	0.187
Transcendence	4.14	4.24	0.136
Emotional Unity	4.15	4.25	0.135
Emotional Intelligence	4.03	4.13	0.032

Additionally, in Table 10 the linear correlations among the 9 scales of emotional intelligence are presented. The results were statistically significant in every test in 99% trust level (all p-values<0.001), indicating positive correlation in all tested pairs. Concluding, as one of the scales increased, so do all the others, with the most intense dependency, being between universality and transcendence.

Table 10. Pearson's Correlation between the 9 scales of Emotional Intelligence

	Emotional Stimuli	Emotional Recognition	Self-Awareness	Self-Management	Social-Awareness	Social Skills	Universality of Emotions	Transcendence	Emotional Unity
Emotional Stimuli	1	,557**	,577**	,298**	,524**	,469**	,458**	,412**	,402**
		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Emotional Recognition	,557**	1	,560**	,353**	,597**	,542**	,492**	,549**	,487**
	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Self-Awareness	,577**	,560**	1	,538**	,561**	,598**	,585**	,558**	,532**

	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Self-Man-agement	,298**	,353**	,538**	1	,440**	,547**	,522**	,505**	,506**
	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Social-Awareness	,524**	,597**	,561**	,440**	1	,701**	,667**	,678**	,672**
	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Social Skills	,469**	,542**	,598**	,547**	,701**	1	,712**	,757**	,696**
	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000
	520	520	520	520	520	520	520	520	520
Universal-ity of Emo-tions	,458**	,492**	,585**	,522**	,667**	,712**	1	,811**	,766**
	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000
	520	520	520	520	520	520	520	520	520
Transcend-ence	,412**	,549**	,558**	,505**	,678**	,757**	,811**	1	,802**
	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000
	520	520	520	520	520	520	520	520	520
Emotional Unity	,402**	,487**	,532**	,506**	,672**	,696**	,766**	,802**	1
	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	
	520	520	520	520	520	520	520	520	520
**. Correlation is significant at the 0.01 level (2-tailed).									

Continuing, a factor analysis using varimax rotation was conducted, to extract the factor loadings of the questionnaire. The loadings of each variable are presented below in Table 11.

Table 11. Factor loadings

Factor	Questions/Items	Factor loadings
1st	64. I am interested in my fellow man, his needs, and his emotional and social development.	0,736
	62. I have feelings of love, affection, and compassion for my fellow man.	0,729
	44. I'm sensitive to other people 's emotional state.	0,685
	63. I cultivate and develop positive emotions so that they are universally addressed to everyone and everything, respecting that every creature, every social group, every civilization has its own values, emotional expressions, and reactions.	0,677
	38. I care about other people's emotions and concerns.	0,675
	40. I recognize and respect the individual / social differences and the uniqueness of human being.	0,661
	78. I feel the life situation of another person regardless of the social group and the nationality to which he belongs.	0,647
	76. I feel inner harmony and mental uplift when I do positive actions towards the social and natural environment.	0,588
	67. I reward the efforts and successes of other people.	0,550
	42. I understand the values and culture of a team and I can collaborate and understand people from different social backgrounds and civilization.	0,543
	79. I am an entity that belongs to a more general whole and I do not do things that can harm others or the planet in general.	0,521
	41. I can put myself in someone else's shoes, understand him and feel him.	0,519
	60. I have a strong sense of worth, gratitude and truth in my life.	0,517
	66. I help others better manage negative emotional states e.g., stress, irritability, anger.	0,488
	54. I believe that good, interpersonal, emotional relationships are important.	0,474
	72. I admit my mistakes and try to do the right thing.	0,460
	73. I believe that the existence of emotions gives meaning to life.	0,458
	43. I listen carefully and actively to the person who wants to talk to me about a topic that concerns him.	0,458
	46. I try to provide support, encouragement, inspiration and create a positive emotional climate in my personal and working life.	0,439
	47. I can solve personal and interpersonal problems by considering the emotions and perspective of other people.	0,405
	39. I am aware of the emotions and thoughts of the people around me and I try to meet their needs.	0,399
2nd	69. I enjoy life and I am optimistic.	0,752
	70. I am possessed by higher feelings of euphoria, joy, and awe, which I try to convey to others.	0,681
	61. I appreciate the life and goods it offers me, and I have positive feelings even for simple everyday things.	0,620
	80. I love myself and I try to channel this feeling into everything around me (people, animals, plants, etc.).	0,617
	59. I focus on my positive emotions to activate me, to motivate me, to expand my thought and be a guide for changes I must make in my life.	0,603
	75. I am in emotional harmony with nature and the universe.	0,554
	74. I base my decisions on my positive emotions.	0,546
	68. I engage in activities that create emotional fullness for me.	0,542
	56. I feel positive emotions (e.g., peace, joy) and I am good with myself even when I am alone.	0,538

	77. I feel the emotional unity of all things having positive emotions for all the manifestations of life.	0,502
	81. I have self-esteem.	0,487
	57. I am aware of the positive and negative elements of my emotions and my character, I accept them and try to cultivate the positive and decrease the negative ones.	0,469
	58. Based on past experience, I strive to improve to experience more emotional and mental fulfillment.	0,450
	71. I want to learn new things, improve myself, and contribute to the society.	0,431
	55. I set creative goals and by regulating my emotional and mental state I try to do my best to succeed.	0,428
3rd	5. I process and evaluate the incoming emotional stimuli to understand the emotional actions that are manifested.	0,709
	6. When I receive an emotional stimulus, I identify with similar stimuli from which I have been emotionally affected in the past.	0,673
	1. I notice my emotional reactions when I participate, or I am just present at an event.	0,671
	19. I observe and analyze my emotions and thoughts.	0,602
	3. I try to relate emotional stimuli to my physical reactions.	0,570
	7. I try to relate other people's emotional reactions to the stimuli that cause them.	0,512
	2. I understand which emotional stimuli will arouse strong negative emotions e.g., anger, sadness, irritability.	0,507
	27. Constant awareness of my emotions, beliefs and motivations is especially important to me.	0,473
4th	11. I express my feelings verbally.	0,620
	12. I understand when the verbal or non-verbal expression of individuals is identical with the emotion they possess, and they want to show.	0,573
	10. I recognize the emotions of others through non-verbal communication, i.e., facial expressions, gestures, body movements.	0,529
	13. I express my feelings non-verbally (facial expressions, gestures, posture).	0,494
	65. I share my feelings and emotional experiences with those around me.	0,483
	8. I understand from the posture the emotional changes that can occur in other people because of a stimulus.	0,452
	53. I am aware of the non-verbal emotional messages I send to others, but also of what others send to me.	0,450
	45. I accurately identify and properly name the type of emotion that I and those around me experience.	0,445
	37. I understand other people's emotions and the reasons that create them.	0,439
	52. I am emotionally active in my communication with others and I can listen to them, convey my thoughts, and share my emotions.	0,400
	18. I find out that the behavior of some people is different from the emotions that those people express.	0,235
5th	49. I can stay calm and manage situations and conflicts that are emotionally charged.	0,566
	48. I can converse, work in groups, and effectively manage social interactions.	0,486
	51. I accept criticism without being defensive.	0,475
	50. I express my opinion by communicating honestly with others without becoming aggressive.	0,455
	33. I regulate my emotional functions to maximize the results of my work and the achievement of my goals.	0,404
6th	14. I believe that the expression of our emotions is influenced by social and cultural factors and by experiences of the past.	0,602

	16. I believe that recognizing emotions is an important skill that guides our choices and actions.	0,578
	15. I believe that the expression of our emotions is necessary and plays an important role in everyday interaction and in interpersonal relationships.	0,500
	9. I believe that emotional stimuli motivate a person and regulate his behavior.	0,455
7th	34. Even small problems can cause me intense emotional turmoil.	0,740
	36. I need the help of others to manage my emotional tensions.	0,662
	17. I draw hasty conclusions about the emotions that other people may have.	0,609
	30. When there are strong negative emotions (e.g., anxiety, anger), my mental function becomes difficult.	0,567
	26. Sometimes I feel confused by the emotions I feel inside.	0,554
	4. Some emotional stimuli can cause me strong emotional reactions (positive and / or negative).	-0,318
8th	29. Evaluating the priority of social contacts and relationships I do not express unpleasant feelings not to bother/hurt others.	0,670
	28. I observe my emotions when they arise, and I can keep the positive emotions and calm the negative ones.	0,600
	32. I pay attention to the manifestation of my emotions and regulate them to optimize my behavior.	0,498
	35. I manage my emotional functions properly so not to be emotional upset from negative impacts from my social environment.	0,443
9th	22. I understand when I am possessed by positive emotions (joy, enthusiasm) and when I am possessed by negative ones (sadness, irritation).	0,658
	21. I am fully aware of my emotions, my character, and my behavior as well as their impact to other people.	0,544
	23. I have confidence as a person and I know what motivates me, what satisfies me and what I can achieve.	0,478
	20. I can describe my emotional state at any time and locate the source of my emotions.	0,454
	24. I recognize and evaluate my strengths and weaknesses in the emotional field.	0,414
	31. I take responsibility for my emotional behaviors and their effects.	0,391
	25. When I do something in my work and / or in my daily life, I always try to complete it.	0,352
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 20 iterations.		

The first level of the emotional intelligence pyramid, emotional stimuli, includes the questions 1-9. The second level, emotion recognition-perception-expression of emotions, includes the questions 10-18. The questions 19-27 belongs to the third level of self – awareness. The self – management level includes the questions 28-36. As for the fifth level of the pyramid, social awareness-empathy-discrimination of emotions, it includes the questions 37-45. The sixth level of social skills and expertise in emotions consists of the questions 46-54. The next level of universality of emotions and self-actualization contains questions 55-63. The penultimate level of transcendence composed of questions 64-72. The last level of the questionnaire that of emotional unity includes the questions 73-81.

Completing the research, to ensure the reliability of the questionnaire measuring the emotional intelligence, an iterative algorithm was used. This algorithm, through a

random sampling process, collected 1000 different subsamples from the initial dataset (520 participants), consisted of 100 participants each. Next, for every case the Cronbach's Alpha was calculated for the 9 subscales and the whole emotional intelligence scale. The results were remarkable considering that Cronbach's Alpha as an indicator is overly sensitive to the sample's size. The Table 10 below shows the minimum and maximum value of the Cronbach's index from the 1000 repetitions, while also through the means and standard deviations of the reliability values it seems that in total, the 1000 samples also had similarly high reliability as the initial sample. The consistency between each subsample's reliability can be presented as a strong indicator that the studied questionnaire measures emotional intelligence accurately and reliably.

Table 12. Cronbach's Alpha in 1000 subsamples comparing to the initial dataset

Score	Cronbach's Alpha (For the whole sample)	Repetitive algorithm		
		Min Cronbach's	*Max Cronbach's*	*Mean (±std. dev.)*
Emotional Stimuli	0.788	0.744	0.815	0.799±0.125
Emotional Recognition	0.637	0.548	0.725	0.6065±0.111
Self-Awareness	0.776	0.723	0.839	0.771±0.120
Self-Management	0.700	0.658	0.888	0.823±0.088
Social-Awareness	0.853	0.822	0.926	0.884±0.128
Social Skills	0.835	0.803	0.924	0.8435±0.095
Universality of Emotions	0.876	0.788	0.978	0.833±0.098
Transcendence	0.859	0.825	0.849	0.887±0.124
Emotional Unity	0.885	0.858	0.925	0.891±0.058
Emotional Intelligence	0.961	0.923	0.988	0.995±0.038

5   Discussion and Conclusion

This study aimed to quantify the emotional intelligence and investigate its dependency with the demographic characteristics of the participants. The sample consists of 520 participants, most of them females. The majority of respondents were between 45 and 54 years old and regarding education, most of the participants had a master's degree. Furthermore, participants were mainly elementary school teachers working for longer than 20 years in education, with Master's degrees relevant to special needs education.

The inductive statistics revealed significant effect of gender upon Emotional Stimuli, Emotion Recognition, Universality of Emotions, Transcendence, and the total Emotional Intelligence, in which female teachers always reported higher scores compared to males.

Age had Significant correlations with Self-Awareness, Self-Management, and the total Emotional Intelligence, indicating that as age increases, so does Emotional intelligence. Furthermore, the years of teaching experience had significant correlations with

Self-Awareness and Self-Management, indicating that more experience teachers tend to have higher Emotional intelligence.

As for differences on EI between teachers with special needs degree relevance, and those without, 4 significant results were revealed. More specifically, Special needs degree relevance affects significantly Emotional Stimuli, Emotion Recognition, Self-Awareness, and the total Emotional Intelligence. In all cases, teachers with training in Special needs education reported higher EI scores.

Additionally, the tests between Emotional Intelligence among the different educational levels of teachers, revealed 7 significant differences. There was a significant effect of Educational level upon Emotional Stimuli, Self-Awareness, Self-Management, Social Skills, Transcendence, Emotional Unity, and total Emotional Intelligence. For all significant results, participants with PhD reported the highest Emotional intelligence levels, followed by those with a Master's Degree and lastly those with a Bachelor's degree that had the lowest scores, indicating that EI is higher in people with higher educational levels.

Investigating the differences on Emotional Intelligence between the different school grades the teachers are responsible for, it was revealed that only Emotion Recognition was affected. More specifically, Kindergarten teachers appear to have a higher score of Emotional Recognition, followed by the elementary teachers, while the secondary teachers had the lowest score.

Continuing, a significant effect of Special Education Relevance upon Emotional Stimuli, Emotion Recognition, Self-Awareness, and the totality of Emotional Intelligence was revealed, with teachers with a special education relevance having a higher score.

Additionally, the 9 scales of emotional intelligence were positively correlated with each other, concluding that as one of the scales increased, so do all the others, with the most intense dependency, being between universality and transcendence.

Completing the research, to ensure the reliability of the questionnaire measuring the emotional intelligence, an iterative algorithm was used. This algorithm, through a random sampling process, collected 1000 different subsamples from the initial dataset (521 participants), consisted of 100 participants each. Next, for every case the Cronbach's Alpha was calculated for the 9 subscales and the whole emotional intelligence scale. The consistency between each subsample's reliability can be presented as a strong indicator that the studied questionnaire measures emotional intelligence accurately and reliably.

It was observed that the group of teachers possesses better some levels of emotional intelligence of the pyramid compared to some other levels which possesses them, but to a lesser extent. Overall, their level of emotional intelligence is quite good. Based on these results, various strategies can be made to develop and to improve the levels where the amount of possession is lower. Also, the demographic factors we set, seem to affect the dimensions of emotional intelligence but not all of them. The purpose of the construction of the emotional intelligence pyramid is to show the hierarchical levels of which it is composed. The purpose of the Nine Layer Pyramid Model Questionnaire for Emotional Intelligence is to measure emotional intelligence and to examine how well

each person holds each level. The results can show the lowest acquisitions to intervene to increase the specific abilities / skills.

Although it is difficult to provide all the psychometric evidence for a new measure in one study, the results of the present research are encouraging. A remarkable attempt was made for the items of the questionnaire to choose the right words carefully after many changes to convey the desired meaning precisely and for the questionnaire to be readable. The research activity should be continued with multiple studies with different and larger samples and a variety of theoretically relevant criteria. Something else that should be taken seriously in the results through self-reports is the tendency sometimes of the participants to give socially desirable responses, to agree with statements, even have a false insight about their social and emotional skill in depth and not be quite objective and accurate in assessing those skills [53,54]. In the specific measurement some of the measurements showed that teachers possess more some levels of emotional intelligence pyramid model that are high in the hierarchy and less some others that are lower in the pyramid. The specific result as well as the objectivity of the answers on the part of the respondents, should be examined in future measurements.

The Nine Layer Pyramid Model Questionnaire for Emotional Intelligence can be used to evaluate the EI and monitor the development of the nine levels of the pyramid. Moreover, prospective studies whose purpose is to test its reliability and validity on bigger and diverse samples can be carried out and investigate correlation between the EI and other variables, to reveal EI's impacts on them. The Nine Layer Pyramid Model Questionnaire for Emotional Intelligence has been developed as an alternative measure of emotional intelligence of adults to use for scientific and practical purposes in many sectors.

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