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“EDUCATION, REFLECTION, DEVELOPMENT” DOCTORAL SCHOOL**

EXTENDED SUMMARY

**Identifying psychosocial factors for the development of an
educational intervention program for optimizing school
performance in adolescence**

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Key words: psychosocial factors, adolescence, high school performance, emotional intelligence, risk-taking behavior, social support, general self-efficacy, socioeconomic status, risk factor, compensatory factor, developing emotional intelligence abilities.

CHAPTER 1. THEORETICAL BACKGROUND

1.1. General considerations

School abandonment is a complex problem and a common concern for many EU member states, Romania being among the countries reporting the highest school dropout rates. Statistical data provided by the European Commission in 2016 has shown that Romania ranked third in the EU early school leaving ranking, after Spain and Malta (Eurostat, 2016).

There is a series of factors which may influence the student's educational path, both individually and throughout their interaction, such as: characteristics of the family environment, particularities of the socio-economic or cultural climate in which the student develops, psychological individual characteristics, etc. (McEwen & Gianaros, 2010; Goodman, Slap & Huang, 2003; Zimmerman & Katon, 2005; Parker et al., 2004).

A variety of socioeconomic and psychosocial factors, either through their direct or indirect influence, have the potential to jeopardize adolescents' to the emergence of negative school outcomes and school dropout (Gutman, Sameroff & Eccles, 2002; Rafferty, Shinn & Weitzman, 2004). On the other hand, modern theories of development (Bandura, 1997, Vygotsky, 1978) emphasized that a specific risk factor can produce differentiated developmental effects at an inter-individual level, depending on several psychological individual variables (e.g. self-regulatory abilities or self-efficacy).

The general objective of the present research is to (a) identify specific factors that have the potential to exert positive influence on students' performance and to contribute to the prevention of school abandonment in the socio-cultural context of Romania and to b) outline research-informed suggestions for developing intervention programs based on the identified factors.

1.2. School performance – definition

School performance is broadly defined as a benchmark of school progress, reflecting the extent to which the student, teacher and/or the school institution have reached the educational goals (Maslowski, 2001). School performance can be measured by several indicators, such as exam or test results, behavioral, affective, or social indicators reports, etc. (Ward, Stoker & Murray-Ward, 1996). Thus, in the present study, we will refer to the results obtained by the students as a learning activity outcome, and we will use a curriculum-based measure of school performance: students' school grades annual averages.

Inter-individual differences of school performance have been the subject of interest in numerous studies, and the results have shown associations of school performance and executive functions characteristics (Best, Miller & Naglieri, 2011), intelligence (Duckworth & Seligman, 2005), emotional competence (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006), socio-economic status (White, 1982), etc. Although there is an abundance of studies which attempted to explain the relationship of individual psychosocial factors to school performance, only a few papers investigated the relationships between these factors in an interconnected manner (see Downey, Lomas, Billings, Hansen, Stough, 2014; Di Fabio & Palazzeschi, 2009). Hence, the present research might support a better understanding of the psychosocial factors' effects on adolescent students' school performance.

1.3. Adolescent resiliency theory

Resilience refers to the prevention of the negative developmental outcomes associated with the action of a variety of risk factors (Fergus & Zimmerman, 2005). According to the Resilience Theory (Fergus & Zimmerman, 2005), developmental results during adolescence are influenced by two different types of factors: (a) risk factors and (b) compensatory factors. A particular factor can operate both as a risk factor for the occurrence of negative results and as a

promoting factor of positive developmental outcomes, the direction of action being determined by the nature of the factor and the intensity of exposure to the specific factor (Fergus & Zimmerman, 2005).

There are several explanatory models outlined by the resilience theory. Considering the relationships between the psychosocial variables of interest for the present research, highlighted by the international studies, we selected the "Compensatory Model of Resilience" (Fergus & Zimmerman, 2005) as a theoretical foundation which will further drive the empirical research of the relations between the factors. According to this model, a promoting factor has a direct positive effect on the outcome, regardless the effect of the risk factor (Fergus & Zimmerman, 2005).

We will further describe a series of psychosocial factors which will be investigated in the present doctoral research as risk factors and compensatory factors associated to the school performance.

1.4. Risk and compensatory psychosocial factors associated to school performance

The last decades of research have brought to light a number of psychosocial factors associated to school performance such as: emotional skills (Bracket, Rivers, Reyes & Salovey, 2012), risky behaviors (Chau et al., 2016), social support (Malecki & Demaray, 2002), general self-efficacy (Turner, Chandler & Heffer, 2009), etc.

In the present research, the variables of interest were selected considering the shortcomings of the studies conducted in Romania, as well as the developmental particularities of adolescence and the socio-economic context in which the research is conducted. Following the simultaneous consideration of these aspects, five variables of interest were selected, as it follows:

1.4.1. Emotional intelligence

The concept of emotional intelligence was first described as "*the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions*" (Salovey & Mayer, 1990, p.189).

In 1997, psychologists John Mayer and Peter Salovey introduced a theoretical model of emotional intelligence (EI) known as the "Four Branches Model" (Mayer & Salovey, 1997). The EI branches (*i.e.* EI dimensions) outlined by the model are: perceiving emotions, facilitating thinking by using emotions, understanding emotions and managing emotions (Mayer & Salovey, 1997). Each EI branch has its own subordinated emotional abilities (see Mayer & Salovey, 1997 for more details).

Previous studies have shown that emotional abilities can positively assist the learning process (Goleman, 1995; Elias et al., 1992). Emotional intelligence has been identified as a facilitating factor of emotional management in stressful situations, such as standardized testing in schools (Brackett, Rivers & Salovey, 2011). Some studies have identified EI as a significant predictor of school grades (Brackett & Mayer, 2003; Mestre, Guil, Lopes, Salovey, and Gil-Olarte, 2006; Parker et al., 2004). According to a study carried out on a sample of low socio-economic status children, the ability to recognize emotions has facilitated positive social interactions and learning (Izard et al., 2001).

The results of several international studies suggest that the cognitive skills are not the only determinants of the school success, but also the emotional abilities may play an important role (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006, MacCann, Fogarty, Zeidner & Roberts, 2011; Rivers et al., 2013). Therefore, through this research, we intend to expand the investigations on the role of emotional abilities in school performance of adolescents enrolled in upper secondary education in Romania.

1.4.2. Risk-taking behavior

Moore & Gullone (1996) defined adolescent risk-taking as “*behavior which involves potential negative consequences (loss) but is balanced in some way by perceived positive consequences (gain)*” (p. 347). Depending on the associated consequences, risk-taking behaviors can be situated on a continuum, with one end depicted by behaviors that imply a minimum risk, in terms of potential negative consequences, and the other end represented by behaviors with extremely risky potential consequences (Irwin, Igra, Eyre & Millstein, 1997; Gullone, Moore, Moss & Boyd, 2000). A particular category of risk-taking behaviors is represented by exploratory behaviors. These behaviors are characterized by a reduced probability of negative consequences occurrence and the possibility of producing positive health or education effects (Irwin, Igra, Eyre & Millstein, 1997). For example, practicing extreme sports may have negative consequences upon physical integrity (*i.e.* injuries), but at the same time it may produce positive effects in terms of developing new skills or abilities (Irwin, Igra, Eyre & Millstein, 1997; Gullone, Moore, Moss & Boyd, 2000). Thus, practicing extreme sports is considered an exploratory behavior (Irwin, Igra, Eyre & Millstein, 1997; Gullone, Moore, Moss & Boyd, 2000).

Regarding the effects of risk-taking behavior on educational performance, previous research found negative associations between the two variables. Risk-taking behaviors such as alcohol, tobacco or psychotropic substances intake have been associated with absenteeism, low school performance, and the intention of school dropout (Aloise-Young & Chavez 2002; Jeynes 2002; Chau et al., 2016).

In this paper, we will address both exploratory behaviors and extremely risky behaviors in relation to the school performance.

1.4.3. Social support

Recent theoretical approaches have characterized social support (SS) as a subjective assessment of the availability of an individual’s social network to provide assistance in times of need (Malecki & Demaray, 2002; Lakey & Scoboria, 2005). Whilst the conceptualization of social support has been revised and updated over time, the effects of social support on the individual development have been described relatively invariant in the literature (see Cohen & Wills, 1985 and Malecki & Demaray, 2002). Thus, the literature highlighted two effects of social support (see Cohen & Wills, 1985; Malecki & Demaray, 2002): (1) the main effect of social support: social resources are promoting a positive overall affective state, regardless of contextual particularities; (2) the stress-damping effect: social support reduces the negative impact of adverse life events.

In educational settings, the results of previous studies suggested that perceived SS may have multiple positive effects. Consistent support from parents, friends and teachers has been associated with higher rates of classes’ attendance, increased school commitment and lower rates of deviant behaviors (Rosenfeld, Richman & Bowen, 2000). In adolescence, peer SS was associated with higher levels of school commitment (Garcia-Reid, 2007). Other studies have shown a positive effect of teacher SS on students’ behavior and students’ interest in school activities (Garnefski & Diekstra, 1996; Wentzel, 1998).

Taking into account these results, this paper aims to thoroughly investigate the relationship between SS dimensions and school performance, in the socioeconomic and cultural context in Romania.

1.4.4. General self-efficacy

Self-efficacy refers to the perceived ability to mobilize cognitive and motivational resources to plan and execute goal oriented actions (Bandura, 1977; Bandura, 1997). Based on Bandura’s (1997) self-efficacy theoretical model, Schwarzer & Jerusalem (1995) introduced

general self-efficacy, defined as stable, domain-independent perceptions of personal competence, which is generalized over a variety of demanding situations.

Previous studies have documented the effects of self-efficacy on school performance and social interactions in educational settings. High self-efficacy students were more willing to engage in school assignments and outperformed low self-efficacy students (Bandura, 1997; Turner, Chandler & Heffer, 2009). In addition, self-efficacy beliefs were positively associated with interpersonal relationships quality reports (Bandura, 1997).

Through this study, we aim to investigate the general self-efficacy beliefs in a high school students' sample in Romania, taken together with other psychosocial variables and to analyze them in relation to school performance.

1.4.5. Socioeconomic status

Socio-economic factors are described in the literature as fundamental determinants of an individual's development (Pinquart & Sørensen, 2000; Harper et al., 2002). Socio-economic status (SES) reflects the extent to which an individual can access general desirable resources, such as material goods, friends network, professional strength, health, academic opportunities, and so on (Oakes & Rossi, 2003).

In the literature, indicators such as the educational level or the financial level (income) were frequently used for SES measures (Mih, 2010; Zhao, Valcke, Desoete & Verhaeghe, 2011).

Previous research has identified significant relationships between socio-economic status and school performance (Caro, McDonald & Willms, 2009). Also, it has been suggested that this relationship does not remain invariant in time: during the first years of school, the inter-individual school performance differences related to the socio-economic status seem to stagnate. During gymnasium years, a slight deepening of the inter-individual performance differences associated to SES was observed, which gradually progressed and peaked during the high school years (Caro, McDonald & Willms, 2009).

The decision to further investigate the psychosocial factors previously described in this chapter (EI, risk-taking behaviors, SS, general self-efficacy, SSE) in a sample of adolescent high school students in Romania (Cluj-Napoca, Cluj County) was based on the results of the available international literature, according to which the aforementioned factors may have multiple effects on high school performance.

The investigation of psychosocial correlates of high school performance in adolescence is necessary for several reasons. First of all, adolescence is considered a delicate development stage, which may further impact the adult development pathway. The developmental pathway is influenced by a series of psychosocial factors (Brackett, Mayer & Warner, 2004; Parker, Taylor, Eastabrook, Schell & Wood, 2008). Secondly, considering the high rate of early school leaving in Romania, it has become a necessity to investigate the factors associated with school performance and to take preventive actions. Last but not least, the development and implementation of an intervention program based on psychosocial factors which will be highlighted as related to school performance could have secondary beneficial influences, extended beyond the school environment. Thus, the results of the studies included in this doctoral research project may have informative, formative and applicative potential.

CHAPTER 2. AIM AND OBJECTIVES

2.1. Doctoral research project objectives

The present doctoral research aims to support the improvement of the practices and action policies which promote school performance in the socio-cultural and economic context of

Romania. For this purpose, we consider that it is necessary to empirically investigate the factors associated with school performance. Hence, three specific objectives have been identified.

The first objective is to investigate the relationship between psychosocial characteristics (emotional intelligence, risk-taking behaviors, perceived social support, and general self-efficacy) and school performance of adolescents in upper secondary education in Romania (*i.e.* high school). The actions subordinated to this objective will allow obtaining a comprehensive image on the proposed psychosocial characteristics and identifying key intervention points that may promote students' school performance.

According to one of the hypotheses of this project, specific dimensions of psychosocial factors will be associated with adolescents' school performance, and the relation will vary depending on demographic characteristics, such as gender and high school, or socio-economic status indicators. The present research will focus on the specific psychosocial dimensions which will be found as significant predictors of students' performance.

The second objective of this research is to investigate the relationship between the emotional intelligence dimensions and the psychosocial characteristics of the adolescent student (risk-taking behavior, perceived social support and general self-efficacy). Previous research results have suggested that during adolescence years emotional intelligence, may have multiple influences on the developmental pathway, in general, and on the educational path, in particular (Rivers et al., 2013; Di Fabio & Kenny, 2012; Luszczynska, Gutiérrez-Doña & Schwarzer, 2005; Cici, Stanescu & Mohorea, 2012).

Achieving the first and the second objectives will further enable the achievement of **the third objective**, namely to design the initial phases of an intervention program for students' (11th and 12th grade), which may have a positive effect on those specific factors that will be highlighted as school performance predictors.

2.2. Summary of studies' objectives

1st study. The primary objective of this study is to summarize our knowledge on the connection between EI and academic achievement in adolescence. The second objective is to highlight specific factors that were most frequently investigated in the literature regarding the relationship between EI and academic achievement. Also, we aim to identify gaps in the research and to formulate questions that could drive future diligence in this field.

2nd study. The objective of this study is to develop a conceptually and semantically equivalent Romanian version of the Children and Adolescent Social Support Scale (CASSS) (Malecki, Demaray & Elliott, 2000) and to further evaluate the psychometric characteristics of the translated version of the instrument on a Romanian adolescent sample.

3rd study. The objective of this study is to deliver a linguistically validated Romanian version of the Adolescent Risk-taking Questionnaire - Behavior scale (ARQ-b) (Gullone, Moore, Moss & Boyd, 2000) in order to assess the risk-taking behaviors of adolescents in general and of the public school students in particular.

4th study. This study aims to: 1) integrate psychosocial characteristics (*i.e.* emotional intelligence, risk-taking behaviors, social support perceptions, general self-efficacy beliefs) in a predictive model of school performance; 2) test the potential moderating effect of socio-economic status indicators (parental education, family income) on the relationships between psychosocial factors and school performance; 3) investigate the relationship between emotional intelligence dimensions (*i.e.* areas, branches and EI tasks) and the psychosocial characteristics of the adolescent high school student (*i.e.* risk-taking behavior, general self-efficacy and social support perceptions).

5th study. The main objective of this study is to identify essential aspects of the design, implementation and evaluation of the emotional intelligence development programs (in the available empirical literature) such as: program goals, targeted emotional abilities,

implementation methods, implementation effects, etc. Also, a secondary objective is to identify key methodological aspects of the evaluation studies of intervention programs addressing the emotional intelligence.

6th study. Taking into account the results of the 4th and the 5th study, this study's objective is to design the initial phases of an intervention program which aims to develop the specific dimensions of emotional intelligence related to adolescent students' school performance.

CHAPTER 3. RESEARCH METHODOLOGY

3.1. Connecting Emotional Intelligence and Academic Achievement in Adolescence: A Systematic Review

3.1.1. Introduction

A common concern of distinct theoretical approaches of emotional intelligence was to identify its effects in various contexts. In educational settings, previous studies suggested positive multidimensional effects of emotional intelligence (EI) on: school performance (Rivers et al., 2013), students' behavior (Trinidad, Unger, Chou & Johnson, 2004) and interpersonal relationships (Di Fabio, 2015). Given that there is a series of individual studies which reported positive effects of EI in school settings (e.g. Parker et al., 2004, Gil-Olarte Márquez, Palomera Martín & Brackett, 2006, MacCann, Fogarty, Zeidner & Roberts, 2011), through this study, we aim to review the existing empirical literature on the relationship between emotional intelligence and school performance. The main objective is to summarize the available data on the relationship between the two variables. The second objective is to highlight specific factors involved in the relationship between EI and school performance (*i.e.* potential mediators or moderators). Also, through this analysis, we aim to identify the shortcomings of the empirical literature on the topic of interest and to propose further research directions.

3.1.2. Methodology

The procedural guidelines of Judi & Sahari (2013) and of Petticrew & Roberts (2008) were followed in designing, carrying out and reporting the stages of the present systematic analysis of the literature.

First, the research questions were formulated, focusing on essential issues regarding EI - academic achievement relationship related research: (1) What are the aims of the research studies on emotional intelligence and academic achievement? (2) Which emotional intelligence model is most frequently used for measuring the variables defining EI? (3) Which method of assessment is most commonly used for EI in relation to academic achievement? (4) Which type of assessment is frequently used for academic achievement? (5) Which dimensions of EI are found to be significant for academic achievement? (6) Which factors are studied in relation to EI and academic achievement?

In the second phase, a research protocol was developed in order to examine the relevant literature on emotional intelligence and academic achievement, as suggested by Petticrew & Roberts (2008). Full text access studies and dissertations published in journals between 2000 and 2016, which provided empirical data on the relationship between EI and academic achievement, were included in the analysis. All texts included in the review had to be published in English. We included research papers that analyzed the whole EI construct and papers addressing only one/several aspect/s of EI.

The review focused on studies addressing adolescent students, aged between 12-20 years, enrolled in compulsory education in public schools. The following databases were used for the literature search: Wiley, Springer, ScienceDirect, Scopus, ProQuest, Oxford University Press, Cambridge University Press, Central and Eastern European Online Library, Taylor & Francis,

SAGE, BMJ and Online Computer Library Center. Research Gate database it was also searched. The literature search was performed by two groups of keyword combination, as it follows: (1) for EI, it was used *emotional intelligence* and *emotional competence*; (2) for academic achievement the keywords were *academic achievement adolescents* and *academic performance adolescents*.

3.1.3. Results

The search according to the predefined keywords has led to the identification of 789 studies. After the compatibility check of the title and the article summary, 58 studies were retained. Subsequently, duplicates (N = 7) were removed. The list of papers (N = 49) was thoroughly analyzed and filtered according to the above mentioned criteria, and 18 papers fully met the criteria and were included in the analysis. Critical analyzes which did not provide the original data of interest to this work (ie Singh, 2013) were excluded from the analysis. Also, quasi-experimental studies were excluded, as this analysis aims to describe the relationship between the two variables of interest in their "natural" state (*i.e.* before intervention).

RQ1: What are the aims of the research studies on emotional intelligence and academic achievement?

A series of studies aimed to investigate the relationship between global EI and school performance (Petrides, Frederickson & Furnham, 2004; Abdo, 2011) as well as to explore the link between specific EI dimensions and school performance (Parker et al., 2004; MacCann, Fogarty, Zeidner & Roberts, 2011; Yazici, Seyis & Altun, 2011). While some papers focused on the influence of factors (such as demographics or psychological characteristics) on the EI-school performance relationship (Ekaterini Kargakou, 2015; Yazici, Seyis & Altun, 2011), other studies intended to test a mediating / moderating effect of EI (Hogan, 2009; Qualter, Gardner, Pope, Hutchinson, & Whiteley, 2012) (see Table 1).

Table 1
Identified aims of research on EI and academic achievement in adolescents presented in the reviewed studies (2000-2016)

Study aim
Examine the relationship between EI and academic achievement
Assess the relationship between different academic levels and EI
Investigate the role of various demographics on EI and academic achievement
Examine if EI moderate the relationship between cognitive ability and academic performance
Investigate the relationship between EI and students' socio-economic adjustment to school
Examine the role of fluid intelligence, personality traits and EI in predicting scholastic success
Determine if differences in scholastic performance are related to differences in personality or EI
Examine the relationship between EI and negative affect towards school tasks and academic achievement
Investigate the influence of EI and self efficacy beliefs on academic achievement
Explore the predictive influence of EI, peer social support and family social support on GPA
Assess the influence of EI and mindfulness on how adolescents cope with academic difficulties and stress
Test a model that depicts coping as a mediator of EI-academic achievement relationship

RQ 2: Which emotional intelligence model is most frequently used for measuring the variables defining EI?

The analysis revealed that the majority of the reviewed studies conceptualized and measured EI according to the trait-based (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008) or mixed EI models (Brouzos, Misailidi & Hadjimatheou, 2014) (see Table 2).

Table 2
Models of EI used for measures in the reviewed literature

Item	Number
Trait-based measure	7
Mixed model measure	6
Ability-based measure	2
Combined measures	3

RQ 3: Which method of assessment is most commonly used for emotional intelligence in relation to academic achievement?

Most of the studies included in this analysis used self-reporting measures of EI (Nasir, 2011; Yüksel & Geban, 2014). Several studies used both self-reporting and performance-based measures (Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006). Only two studies used solely performance-based measures of EI (Abdullah, Elias, Mahyuddin & Uli, 2004). The results are available in Table 3.

Table 3
Methods used for assessing EI described in the reviewed literature

Item	Number
Self-report	12
Self-report and performance-based	3
Performance-based	2
Self-report and other-report	1

RQ 4: Which type of assessment is frequently used for academic achievement?

GPA (grade point average), was highlighted as the most commonly used indicator of school performance. Some studies have considered GPA for the entire school year (Hogan, 2009) while others only for one semester (Parker et al., 2004). Most studies have measured GPA across all school subjects (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008). The results of the national tests were also an indicator of school performance used in some of the reviewed studies (Petrides, Frederickson & Furnham, 2004). The entire list of school performance measures is available in Table 4.

Table 4
Types of measures used for academic achievement in the reviewed literature

Item	Number
GPA	12
National examination scores	2
Annual examination grades	1
Mid-term examination results	1
Academic scores of the last given exam	1
Teacher ratings	1

RQ 5: Which dimensions of emotional intelligence are found to be significant for academic achievement?

Most of the reviewed studies reported a significant association between the overall EI (or total EI) and school performance (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008; Abdullah, Elias, Mahyuddin & Uli, 2004). Only a few studies which did not find a statistically significant association between the two variables (see Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006; Ekaterini Kargakou, 2015). From the list of papers that used EI combined measures, one study found that both self-reporting and performance-based measures of EI

predicted school performance, and EI performance test scores had a higher predictive value compared to self-reporting scores (Di Fabio & Palazzeschi, 2009). Specific dimensions of EI, such as adaptability and stress management, followed by emotional management and interpersonal EI have been found to be significant school performance predictors by several studies (Parker et al., 2004; Brouzos, Misailidi & Hadjimattheou, 2014). The complete list of EI dimensions related to school performance can be found in Table 5.

Table 5
Identified dimensions of EI significant for academic achievement

Item	Number
Overall EI	11
Adaptability	4
Stress management	4
Emotional management	3
Interpersonal EI	3
Strategic EI	1
Sociability	1
Awareness of emotions	1
Understanding emotions	1

RQ 6: Which factors are studied in relation to emotional intelligence and academic achievement?

Some of the analyzed studies focused on identifying specific factors that may impact the relationship between EI and academic performance. Table 6 summarizes the factors identified in the analyzed papers. A series of studies investigated the effects of demographic characteristics (e.g. gender, age, socio-economic status of the family) on the relationship between EI and school performance (Yazici, Seyis & Altun, 2011), while other papers explained the influence of cognitive intelligence and personality traits (Downey, Lomas, Billings, Hansen, & Stough, 2014).

Table 6
Factors investigated in relation to emotional intelligence and academic achievement in the reviewed literature (2000-2016)

Variable
Gender
Personality traits
Cognitive intelligence
Coping style
Academic affect
Socio-economic status of family
Social support
Participation in extracurricular activities
School attending and school rules breakage

3.1.4. Discussion, conclusions and limits

Through this study, a systematic analysis of the research studies on the relationship between EI and school performance in adolescence (2000-2016) was carried out.

Most of the analyzed studies found a significant association between global or total EI and school performance, and some papers highlighted specific EI dimensions associated with school success (see Table 5). The majority of the reviewed studies used GPA as a school performance measure. Regarding EI, self-reporting instruments have been used most frequently for measurements (Table 3). The studies included in the analysis investigated the influence of demographic characteristics, coping style and social support on the EI - school performance relationship (Table 6).

The results of this study may be used as a ground for initiating the development of EI training programs in relation to the school performance of the adolescent students. Nevertheless, the results presented in the present paper should be interpreted keeping in consideration that most of the studies included in the analysis used self-reporting questionnaires. Using this type of instruments might bring numerous benefits in terms of psychometric accuracy, but it can also provide biased data, as this type of instruments assess the perceived level of EI which may not always coincide with the person's actual level of EI.

3.2. Romanian translation and linguistic validation of Children and Adolescent Social Support Scale (CASSS)

3.2.1. Introduction

Social support has multidimensional effects on the developmental outcomes during childhood and adolescence (Demaray & Malecki, 2002; Rueger, Malecki & Demaray, 2010).

In educational settings, research found that specific dimensions of social support were positively associated with school performance (Malecki & Demaray, 2006; Richman, Rosenfeld & Bowen, 1998). In terms of interpersonal relationships, research has revealed a predictive effect of social support on social skills (Malecki & Demaray, 2002). Also, social support has been repeatedly associated with positive behavioral indicators (Moran & DuBois, 2002; King, Huebner, Suldo & Valois, 2006; Kumar, Lal & Bhuchar, 2014).

Given the associations of social support with various developmental outcomes, it is important to carefully consider measurement issues of this factor when investigating its influence in different areas of individual functioning (e.g. behavioral, educational, emotional, etc.).

Children and Adolescent Social Support Scale (CASSS, Malecki, Demaray & Elliott, 2000) has been developed to measure social support perceptions in childhood and adolescence. The purpose of the present study is to provide a Romanian translated, linguistically validated and pre-tested on adolescent students' version of the CASSS (Malecki, Demaray & Elliott, 2000). The Romanian translated CASSS version (Malecki, Demaray & Elliott, 2000) may be further used to effectively identify specific factors which support positive psychosocial development, in general, and to prevent undesirable school performance outcomes of adolescent students in Romania, in particular.

3.2.2. Methodology

Participants. Children and Adolescent Social Support Scale has been tested on 18 adolescent students in Romania (Region: Cluj-Napoca) aged 13-19 ($M = 16.55$, $SD = 2.09$). Most of the respondents were female ($N = 12$). Data was collected online through EUSurvey platform (n.d.). For minor participants, prior to the scale completion, the parents' agreement for participation in the study was obtained through a consent form. An informed study agreement was signed online by all participants before accessing the scale web page.

Measures. Children and Adolescent Social Support Scale (Malecki, Demaray & Elliott, 2000) is a 60-item scale which measures social support perceptions of children and adolescents (grades III-XII). The scale comprises five subscales, each corresponding to a specific source of social support: Parent, Teacher, Classmate, Close Friend, People in my school (Malecki, Demaray & Elliott, 2000). The items describe specific social support behaviors (Malecki, Demaray & Elliott, 2000). Participants are asked to read the statements and to respond by rating (a) how often they perceive a specific support from a given source (i.e. frequency rating) and (b) how important is for them to perceive that specific support (i.e. importance rating).

Literature indicates good psychometric properties of the original CASSS (Malecki, Demaray & Elliott, 2000), Alpha Cronbach $\alpha = .97$ for the Total Frequency scores and $\alpha = .96$ for the Total Importance scores (Rueger, Malecki & Demaray, 2010; Malecki & Demaray, 2003). Similar results have been reported for individual subscales (details in Malecki, Demaray & Elliott, 2000; Rueger, Malecki & Demaray, 2010).

Procedure. Initially, the authors' agreement to use Children and Adolescent Social Support Scale (Malecki, Demaray & Elliott, 2000) was obtained (CK Malecki, personal communication, 30 March 2016). The translation process was carried out in line with the available literature recommendations (Brislin, 1976; Van Widenfelt, Treffers, De Beurs, Siebelink, & Koudijs, 2005). The scale was translated from English to Romanian by two certified Romanian translators. The translation was reviewed and adjusted by a team of experts (*i.e.* three academics in the field of Psychology). This step was followed by a back-translation process, performed by a contracted Romanian translator to deliver the English translation of the Romanian items. The third procedural step consisted in de-centering. In this phase, the back-translated version of the scale was compared to the original version of the scale, in order to ensure the equivalence and conceptual meaning of the items. Subsequently, the Romanian version was further refined by the team of experts, focusing on the clarity of the translated items, the meaning of the items being the main concern of this procedural step. Participants completed the translated version and few adjustments were made before the final version was attained.

In the pre-test phase of the study, 24 Romanian participants individually filled in the online Romanian version of the CASSS (Malecki, Demaray & Elliott, 2000). After two weeks from the first data collection, participants were asked to complete the original English version of the scale, this being the post-test phase of the study. From the initial sample (N=24), 18 respondents completed both versions of the instrument. Several statistical procedures were followed in order to linguistically validate the Romanian version of the scale.

Statistical analysis. The internal consistency coefficients for the two versions of the scale (original and translated) were calculated for both total scores (Frequency and Importance) and for each subscale (Parent, Teacher, Classmate, Close Friend, People in my school). The Wilcoxon Sign Rank Test (Wilcoxon, 1945) was used to inspect whether there were statistically significant differences between the median values of the two versions of the scale. Last but not least, a correlation analysis was run (Spearman, 1904) to investigate the relationship between the original CASSS scores and the Romanian translated CASSS scores. The statistical analysis was run with IBM SPSS Statistics 20.0 (2011).

3.2.3. Results

The internal consistency coefficients (Cronbach, 1951) for Frequency ratings recorded excellent values for each subscale (Parent, Teacher, Classmate, Close Friend, People in my school), $\alpha > .9$ (see Table 1). The Alpha coefficient for Total Frequency scores indicated an acceptable level of internal consistency, $\alpha = .79$.

The Importance ratings scores registered Alpha coefficients ranging from acceptable (Total Importance, $\alpha = .75$; Parent subscale, $\alpha = .76$), to excellent values (Classmate subscale, $\alpha = .90$; People in my school subscale, $\alpha = .92$).

Table 1

Summary of reliability data of the CASSS Romanian translated and English version

	CASSS	Total	Cronbach's Alpha (α)				
			Parent	Teacher	Classmate	Close friend	People in my school
Frequency	Romanian	.79	.91	.95	.93	.94	.94
	English	.77	.94	.96	.95	.96	.97
Importance	Romanian	.75	.76	.86	.90	.78	.92
	English	.71	.81	.84	.94	.79	.97

Note. α based on standardized items

A Wilcoxon signed-rank test revealed no significant differences between the pre-test (i.e. CASSS Romanian translated version) and post-test ranks (i.e. CASSS original English version) for Total Frequency subscale ($Z = -.370$, $p=.711$) and Total Importance subscale ($Z=-.167$, $p=.868$) of the two versions of the CASSS. Similarly, there were no significant differences across the subscales ranks (Table 2).

Table 2

Wilcoxon test results for CASSS English and Romanian translated version

	Frequency				Importance			
	Z	p	Mdn		Z	p	Mdn	
			Pre-test	Post-test			Pre-test	Post-test
Total	-.37	.71	263.50	262.50	-.16	.87	133.00	133.50
Parent	-1.07	.28	60.00	59.50	-1.17	.24	28.50	31.00
Teacher	-.57	.70	56.50	57.00	-.07	.94	27.50	30.00
Classmate	-.23	.82	47.50	51.00	-.41	.68	24.00	24.50
Close friend	-.79	.43	60.00	59.00	-1.11	.26	29.00	29.00
People in my school	-.86	.39	36.00	38.50	-.99	.32	20.50	21.50

Note. Asymptotic significances are displayed. $p < .05$

Further, a Spearman's correlation test was run between the translated and original CASSS scores. There was a high, positive monotonic correlation between pre-test and post-test Total Frequency scores ($rs=.88$, $p<.01$). Similar results were found for Total Importance scores, $rs=.75$, $p<.01$. Subscales correlation coefficients indicated moderate ($rs=.56$, $p<.05$ for Frequency Classmate subscale) to very high correlations ($rs=.91$, $p<.01$ for Frequency Teacher subscale). Importance subscale scores registered correlation coefficients between the two CASSS versions ranging from low ($rs=.37$, $p<.05$ for Close friend subscale) to high correlation ($rs=.77$, $p<.01$ for Teacher subscale). Detailed data on correlation test results is provided in Table 3.

Table 3

Correlation coefficient values between the pre-test and post-test scores

	Spearman's rho (r_s)	
	Frequency	Importance
Total	.88**	.75**
Parent	.81**	.67**
Teacher	.91**	.77**
Classmate	.56*	.53*
Close friend	.85**	.37*
People in my school	.90**	.76**

Note. Pre-test scores refer to the translated version of CASSS; Post-test scores refer to the original English version of CASSS. * $p<.05$; ** $p<.01$

3.2.4. Discussion, conclusions and limits

3.2.4. Discussion, conclusions and limits

The aim of this study was to translate and linguistically validate the Romanian version of the Children and Adolescent Social Support Scale (CASSS, Malecki, Demaray & Elliott, 2000) and to pre-test it on a Romanian sample. The results obtained in the present study suggest that the CASSS (Malecki, Demaray & Elliott, 2000) Romanian translated scores can be used reliably as indicators of perceived social support. For Frequency scores, good and excellent internal consistency values were found for all subscales (Parent, Teacher, Classmate, Close Friend, and People in my school). These data are consistent with the results of previous studies, indicating a high internal consistency of the scale (Malecki, Demaray & Elliott 2000). Similarly, for the importance scores, the internal consistency coefficients of subscales registered values ranging from acceptable to excellent. Moreover, the total Frequency and Importance scores have shown good internal consistency. According to the statistical analyses, the two CASSS versions (*i.e.* Romanian translated and English) are linguistically equivalent. Additionally, positive correlations were found between the original version and the translated version' scores. Similar results were obtained for subscale scores. Correlation coefficients had mostly high and very high values.

The results of this study can support the expansion of perceived social support measures in relation to other psychosocial aspects of the academic performance of Romanian adolescents. Nevertheless, there are several limitations of this study, related to the characteristics of the sample. First, the instrument was piloted on a small sample (N=18). Also, participants were mostly females (N=12). Consequently, cross-validation of the results obtained in this study and extensive psychometric analysis is recommended on more diverse samples of Romanian adolescents.

3.3. Romanian Translation and Linguistic Validation of the Adolescent Risk-taking Behavior Scale (ARQ-b)

3.3.1. Introduction

Risk-taking behaviors describe actions with a high probability of undesirable psychosocial consequences occurrence at individual, group or societal level (Irwin, 1993). Over the years, a number of risk-taking behavior measures were developed. Some of the available measures were considered less efficient, due to their limitation to a singular type of risk-taking behavior, such as substance use or sexual risky behaviors (Moore & Gullone, 1996). Furthermore, most of the available measures were relying on a list of researcher nominated risk-taking behaviors. This type of measurement approach might not always reflect the state of the phenomenon, due to the fact that adolescents may have a completely different definition of risk-taking behaviors, as opposed to adults (see Moore & Gullone, 1996). In order to address the above mentioned measurement-related issues, Gullone, Moore, Moss & Boyd (2000) developed the Adolescent Risk-taking Questionnaire (ARQ) using a different approach. Hence, the development of ARQ was initiated based on the reports of a large sample of adolescents, in which they were asked to nominate up to four behaviors considered risky by them (Gullone, Moore, Moss & Boyd, 2000). Subsequently, a series of procedural steps followed and the questionnaire was revised in order to obtain the final version (for details see Gullone, Moore, Moss & Boyd, 2000).

ARQ (Gullone, Moore, Moss & Boyd, 2000) is a self-reporting measure, developed to assess risk-taking behavior in adolescence and it delivers a comprehensive bidimensional insight on: (a) risk-behavior engagement and (b) adolescent perceptions of riskiness regarding specific behaviors. The questionnaire comprises two distinct scales, each measuring one of the above

mentioned dimensions of risk-taking behavior in adolescence. The scales can be used and interpreted separately, depending on the research interest.

3.3.2. Methodology

Participants. Twenty four adolescents (age $M = 16.61$ years, $SD = 2.00$) enrolled in two high schools in Cluj-Napoca participated in this study. Most of the respondents were females ($N = 15$). For the participants under 18 years old, consent from parents/legal guardians was obtained before completing the scales. Each participant signed an agreement to participate in the study, through which the anonymity and confidentiality of the data was ensured. Also, permission was granted from the management of school institutions to disseminate the web address among students studying at a bilingual, Romanian-English school profile, to ensure a minimum level of English language skills, needed to complete the scale. The data was collected online via the EUSurvey platform (n.d.).

Measures. The Adolescent Risk-taking Questionnaire (Gullone, Moore, Moss & Boyd, 2000) is a 22-item self-reporting scale, each item specifying an individual risk-taking behavior. For both Behavior scale and Perception scale that are included in the questionnaire, the items are divided into four subscales, each one corresponding to a category of risk-taking behavior, such as: thrill-seeking, rebellious risk, reckless risk and antisocial risk (Gullone, Moore, Moss & Boyd, 2000). Thrill-seeking behavior subscale includes actions generally socially accepted, with potential consequences of low severity (Gullone, Moore, Moss & Boyd, 2000). Rebellious risk subscale and Antisocial risk behavior subscale comprise behaviors which can generate threatening social or legal consequences upon the individual and his/her social environment (Gullone, Moore, Moss & Boyd, 2000). Behaviors enveloped by the Reckless risk subscale are considered the most dangerous in terms of potential consequences upon the individual (Gullone, Moore, Moss & Boyd, 2000). The Total risk behavior score can be computed by adding up the ratings for all the items of the scale.

ARQ has demonstrated good psychometric properties in the studies done so far (Gullone, Moore, Moss & Boyd, 2000; Gullone & Moore, 2000).

Procedure. Firstly, permission to use the questionnaire in the study was obtained from the authors (E. Gullone, written personal communication, 20 April 2016). The procedural steps followed in ARQ-b's translation and linguistic validation study (Gullone, Moore, Moss & Boyd, 2000) were similar to those presented in the second study (see Chapter 3.2).

In the pre-test phase, participants ($N = 29$) completed online the Romanian translated ARQ-b scale (Gullone, Moore, Moss & Boyd, 2000). Data was collected in November, 2016. Two weeks after the first data collection, in the post-test phase, the participants were invited to complete the original version of the scale, in English. From the initial group of respondents, 24 participants completed both versions of the scale and their answers were statistically analyzed.

Data analysis. Internal consistency coefficients were calculated for both versions of the scale, original and Romanian translated ($N = 24$). Subsequently, the equivalence between the two versions of the scale was tested. The differences between the medians of the two versions, (*i.e.* CASSS original and CASSS Romanian translated), were tested using Wilcoxon Signed Rank Test (Wilcoxon, 1945). Rank correlation coefficients (Spearman, 1904) were calculated for the translated version scores and the original scale scores.

3.3.3. Results

The preliminary reliability analysis (N=24) revealed Cronbach's alpha values for the Romanian translated version of ARQ-b of $\alpha=.71$, whilst for the original English version of ARQ-b, $\alpha=.74$. Furthermore, the results of the Spearman's correlation analysis (N=24) highlighted a strong, positive correlation between the Romanian translated ARQ-b and original English ARQ-b Total scores ($r_s=.70, p<.01$). Strong ($r_s=.60, p<.05$ for Reckless behavior subscale) to very strong ($r_s=.80, p<.01$ for Thrill-seeking behavior subscale) positive correlations were found among the subscales. Item correlation coefficients varied from moderate ($r_s=.50, p<.05$ for Items number 3 and 4) to very strong correlations ($r_s=.87, p<.01$ for Item number 12). Further results of the correlation analysis can be inspected in Table 1.

The results of the Wilcoxon test failed to reveal significant differences between the Romanian ARQ-b ranks and the English ARQ-b ranks for Total scores ($Z=-.858, p=.391$). Similar results were found for the subscales ranks (see Table 2).

Table 1
Correlation analysis results between Romanian translated and original English ARQ-b scores (N=24 respondents)

Item	Spearman's rho
Total score	.70**
Thrill-seeking behavior	.80**
Rebellious behavior	.79**
Reckless behavior	.60*
Antisocial behavior	.64**
Item 1	.81**
Item 2	.85**
Item 3	.50*
Item 4	.50*
Item 5	.57*
Item 6	.54*
Item 7	.61*
Item 8	.80**
Item 9	.76**
Item 10	.73**
Item 11	.74**
Item 12	.87**
Item 13	.70**
Item 14	.79**
Item 15	.67**
Item 16	.75**
Item 17	.54*
Item 18	.70**
Item 19	.64**
Item 20	.79**
Item 21	.60**
Item 22	.85**

Note. ** $p<.01$ * $p<.05$ Pre-test – Romanian translated ARQ-b;
Post-test – English ARQ-b

Table 2
Wilcoxon test results for ARQ-b Romanian translated and ARQ English version (N=24 respondents)

	Z	p	Mdn	
			<u>Translated</u> <u>ARQ-b</u>	<u>English</u> <u>ARQ-b</u>
Total score	-.858	.391	10.50	11.00
Thrill-seeking behavior	-.343	.732	4.50	4.50
Rebellious behavior	-1.72	.225	2.50	3.00
Reckless behavior	-1.31	.190	.50	1.00
Antisocial behavior	-.142	.887	3.00	3.00

Note. Asymptotic significances are displayed. $p < .05$

3.3.4. Discussion, conclusions and limits

The purpose of this study was to provide a translated and linguistically validated version of the Adolescent Risk-taking Behavior Scale (ARQ-b; Gullone, Moore, Moss & Boyd, 2000). The results of the linguistic validation process indicated that the scale is a valid measure of risk-taking behavior. The internal consistency values obtained in this study indicated that the overall score is a valid measure of risk-taking behavior in adolescence. The correlation coefficient values of the item pairs indicated moderate to very strong associations. Wilcoxon Test results suggested that the translated ARQ-b version and the original ARQ-b version are linguistically equivalent.

The results of this study may support the expansion of research, in terms of using the translated version of ARQ-b (Gullone, Moore, Moss & Boyd, 2000) to investigate the relationship between risk-taking behavior and developmental outcomes, in general or educational outcomes, in particular. Nevertheless, this study has some limits, such as the size of the sample of respondents (N = 24 adolescents). The psychometric properties of the Adolescent Risk-taking Behavior Scale (Gullone, Moore, Moss & Boyd, 2000) will be thoroughly investigated in the fourth study of this doctoral research.

3.4. Predicting students' high school performance based on psychosocial characteristics

3.4.1. Introduction

Early school leaving is one of the contemporary challenges in Romania („Early leavers from education and training”, 2016). Low school grades have been found as one of the early indicators of school dropout (Andrei, Profiroiu, Iacob & Ileanu, 2011; Ensminger & Slusarcick, 1992). The psycho-socio-economic diversity among students' raises new challenges for the school institutions, such as: identifying the diversity of needs, meeting the educational needs of a heterogeneous school population, and providing the necessary support to ensure chances of school completion. Hence, this study aims to investigate the psychosocial characteristics associated with school performance in high school. The psychosocial characteristics of interest for this study have been selected based on their recognition in the international literature as having a predictive effect on school performance.

Factor no. 1: Emotional Intelligence. Previous research has highlighted emotional intelligence (EI) as a predictive factor of school performance in adolescence (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006, MacCann, Fogarty, Zeidner & Roberts, 2011). Significant associations were reported between EI test scores and students' grades (Rivers et al.,

2013). The total EI test score, as well as selected EI branches scores (*i.e.* using emotions to facilitate thought, understanding emotions and managing emotions), significantly predicted students' grades (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006; MacCann, Fogarty, Zeidner & Roberts, 2011).

Moreover, previous research has documented the relationship of EI with a range of psychosocial characteristics, which may have, in turn, an effect on the developmental outcomes in adolescence, as well as on particular educational outcomes. Emotional intelligence has been identified as a significant predictor of risk behaviors, such as substance abuse (Rivers et al., 2013). Similarly, Total EI and specific subordinate abilities were positively associated with perceived social support (Di Fabio, 2015; Ciarrochi, Heaven & Supavadeeprasit, 2008). Last but not least, previous studies linked EI to self-efficacy beliefs (Cicei, Stanescu & Mohorea, 2012).

Factor no. 2: Risk-taking behaviors. Risk-taking behavior is among the psychosocial factors correlates of high school performance described by the empirical literature.

Previous studies have shown significant associations between substance abuse behaviors (e.g. alcohol, tobacco, psychotropic substances) and sexual risky behaviors (e.g. unprotected sex) and low school performance (Chau et al., 2016, Luster & Small, 1994). Students with higher grades reported a lower probability of engaging in risky behaviors (Resnick, Ireland & Borowsky, 2004). Furthermore, risk behavior engagement was related to higher school dropout rates (Chau et al. 2016).

Factor no. 3: Social Support. Social support (SS) is recognized for its main effect of supporting the overall positive functioning of the individual and the compensatory effect in reducing the negative impact of stress conditions (Malecki & Demaray, 2002). Numerous studies have identified associations between perceived social support from different sources and school performance in adolescence. General SS was identified as a predictor of school performance, measured by grades' average (Malecki & Demaray, 2006). Family SS and friends SS has been positively associated with high school grades (Richman, Rosenfeld & Bowen, 1998).

Factor no. 4: General Self-efficacy. Previous research on the relationship between general self-efficacy and school performance measured by grades' average, led to inconsistent results. Some studies have found general self-efficacy as a significant predictor of school performance (Turner, Chandler & Heffer, 2009; Luszczynska, Gutiérrez-Doña & Schwarzer, 2005), while others reported a statistically insignificant predictive effect of general self-efficacy (Feldman & Kubota, 2015). In this study we will investigate the relationship between the two variables on a sample of Romanian adolescents.

Factor no. 5: Socioeconomic Status. One of the aims of this study was to explore a moderator effect of the socioeconomic status (SES) indicators on the relationship between the psychosocial factors (*i.e.* EI, risk-taking behaviors, SS) and school performance. Previous research has suggested that SES indicators, such as parents' education and family income were associated with EI variables (Harrod & Scheer, 2005) and risk-taking behaviors (Lowry, Kann, Collins & Kolbe, 1996; Hanson & Chen, 2007), while unemployment and government financial aid was associated with lower levels of self-efficacy (Boardman & Robert, 2000). In this study, we will explore the interaction of SES indicators with psychosocial variables in a prediction model of school performance.

Taking into account the above-mentioned relations between variables, a deeper understanding of the relationships between the psychosocial factors and school performance may have theoretical and practical implications for educational policies, education providers and students' support services (e.g. school counselors, school psychologists and teachers). The results of this study may facilitate a better understanding of school performance determinants in general and may contribute in developing strategies for addressing complex problems in low-school achievers or school dropout prone students.

3.4.2. Study objectives and hypothesis

The purpose of this study is to identify key intervention factors that may have a positive effect on high school students' performance. The following objectives were formulated:

- O1. To test prediction models of school performance based on students' psychosocial characteristics: emotional intelligence, risk-taking behaviors, social support perceptions, and general self-efficacy beliefs;
- O2. To investigate a moderating effect of socioeconomic indicators (*i.e.* parental education level, family income) on the relationships between psychosocial factors (*i.e.* emotional intelligence, social support, risk-taking behaviors, general self-efficacy) and school performance;
- O3. To investigate the relationship between emotional intelligence dimensions (*i.e.* areas, branches and EI tasks) and the psychosocial characteristics of the adolescent student (*i.e.* risk behaviors engagement, general self-efficacy, social support perceptions).

Based on the results highlighted by the international literature, the following working hypotheses were elaborated:

- H1. Psychosocial factors (*i.e.* emotional intelligence, risk-taking behaviors, social support, and general self-efficacy) are significant predictors of students' performance;
- H2. (Exploratory hypothesis) Indicators of socioeconomic status will moderate the relationship between psychosocial factors (*i.e.* emotional intelligence, social support, risk-taking behaviors, and general self-efficacy) and school performance;
- H3. (Exploratory hypothesis) Emotional intelligence dimensions will be associated to risk-taking behavior, social support perceptions and general self-efficacy beliefs;

3.4.3. Methodology

Study design

The present study has a non-experimental design, with the following predictive variables: emotional intelligence, risk-taking behavior, social support, general self-efficacy and socioeconomic status. The criterion variable is represented by school performance, measured by students' grades averages.

Participants

A number of 240 high school students from the 11th and 12th grades with a mean age of 17.33 ($SD = 0.47$) participated in this study. A total of 151 were females, with a mean age of 17.34, ($SD = 0.50$), 85 were male ($M = 17.22$, $SD = 0.50$), and 4 participants ($M = 17.50$, $SD = 0.58$) did not declare their gender. Participants were enrolled in four high schools with different levels of performance, from Cluj-Napoca, Cluj County, Romania. The participating highschools' names will remain anonymous, due to confidentiality clauses.

Measures

The Romanian translated version of *Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) V 2.0* (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011) was used for emotional intelligence measures. MSCEIT is a performance-based scale which measures emotional problem solving skills (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011). MSCEIT (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011) provides a total coefficient of emotional intelligence and individual scores for the EI areas: the experiential area and the strategic area. Experiential EI score is an indicator of a person's ability to perceive emotional information and use it as to support thinking, and the strategic EI score reflects a person's ability to understand and use the emotional information (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011). EI branches are:

perceiving emotions, facilitating thought, understanding emotions and managing emotions (Mayer, Salovey, Caruso & Sitarenios, 2003; Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011). EI tasks are: Faces, Pictures, Facilitation, Sensations, Changes, Blends, Emotional management and Emotional relations (Mayer, Salovey, Caruso & Sitarenios, 2003; Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011).

The second measure used in this study is the *Adolescent Risk-taking Questionnaire - Behavior Scale (ARQ-b)* (Gullone, Moore, Moss & Boyd, 2000), translated and linguistically validated on Romanian adolescent in the third study of this doctoral research. ARQ-b (Gullone, Moore, Moss & Boyd, 2000) measures the frequency with which a teenager engages in a list of risk-taking behaviors.

The scale has demonstrated good psychometric properties in the international studies (see Gullone, Paul & Moore, 2000). In the present research, the scale had a good internal consistency, $\alpha = .85$. The subscales had internal consistency coefficients of .43, .81, .72 and .63. The results of the factorial exploratory analysis conducted in this study identified some items of the thrill-seeking subscale as being problematic. These items may not be conceptually embedded in the culture of the participants to this study.

Social support was measured with the *Children and Adolescent Social Support Scale (CASSS)* (Malecki, Demaray & Elliott, 2000), previously translated and linguistically adapted for the Romanian adolescent population (see the second study of this paper). The scale has 5 subscales which measure social support from the following sources: parent, teacher, classmate, close friend, school.

Previous studies reported a good internal validity of both total CASSS scores and subscales scores (Rueger, Malecki & Demaray, 2010; Malecki & Demaray, 2003). The results of the second study of this doctoral research indicated that the Romanian translated CASSS (Malecki, Demaray & Elliott, 2000) is a valid measure. In this study, the scale had an internal consistency coefficient $\alpha = .95$. Also, the results of the exploratory factorial analysis supported the five factor structure of the scale.

Data on general self-efficacy beliefs was collected through the *General Self-Efficacy Scale (GSE)* (Băban, Schwarzer & Jerusalem, 1996). The scale has 10 items measuring a set of self-efficacy beliefs. The scale has demonstrated good psychometric properties in previous studies (see Scholz, Gutiérrez-Doña, Sud & Schwarzer, 2002). In this study, the scale had an internal consistency coefficient $\alpha = .87$ and the factorial exploratory analysis confirmed the unidimensionality of the construct.

In order to measure the *socio-economic status*, several questions were formulated regarding two main indicators: the level of parental education and family income. The questions referred to the highest level of education completed by the respondent's parents (or legal guardian) and the average monthly income of the family.

School performance was measured by a largely used indicator in research: *the grades' average* for the preceding school year, calculated across all school subjects. In order to minimize the risk of errors, students were allowed to access on-line the school grades records.

Demographic data, such as age, grade level, and gender of participants was collected along with the other variables.

Procedure

Data collection. An invitation to participate in the study was launched to 10 high schools in Cluj-Napoca, of which 4 responded positively to the collaboration invitation. According to the school admission ranking of high schools in Cluj-Napoca (SEI, 2014; SEI, 2013), the participating schools in this study were distributed as it follows: (a) two of the high schools were situated in the upper quartile of the ranking, with the highest admission grades in the county, named in this paper, "High School 1" and "High School 2", in order of their ranking and (b) two high schools

were situated in the lower quartile of the ranking, among the institutions with the lowest grades of admission, which will be further named in this study as "High School 3" and "High School 4", reflecting their position in the ranking (based on the school admission grades). All data was collected by pen-and-paper method, between October 2016 and December 2016. Due to the complexity of the instruments used for measures and the limited time resources, the data collection was carried out in two successive sessions. Since data allowing individual identification of the participants was not collected, the questionnaires applied at the two separate collection sessions were matched based on: school membership, grade level, participant's gender and age and grades' average. A number of 240 participants participated at both data collection sessions and were included in the study. The present study submitted to the general ethical principals in research.

Statistical analysis. Initially, the relationship of each hypothesized independent variable with the criterion variable (*i.e.* grades' average) was investigated by calculating the bivariate correlation matrix. Also, in order to determine the predictive effect of each independent variable simple regression models were tested.

In order to test a moderation effect of the socioeconomic status, the SES indicators scores (*i.e.* education level, average family income, measured on an ordinal scale) were used. The conceptual model of research, based on the main research question aiming to identify school performance predictors, is presented in Figure 1, below.

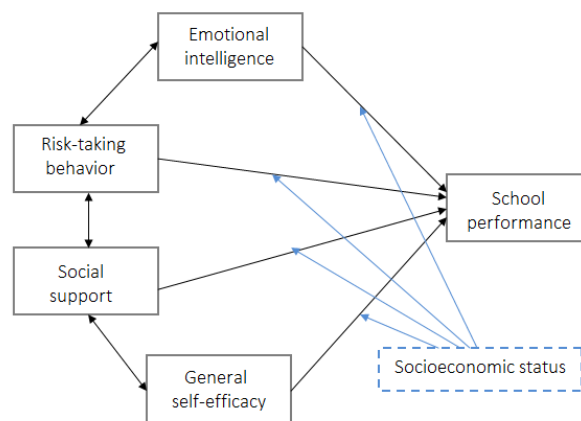


Fig.1. Graphical representation of the conceptual model, resuming the main research questions.

As all predictors, except for general self-efficacy, included component sub factors, measured on distinct subscales, each of these sub factors was tested as possible predictors of school performance (see Figure 2).

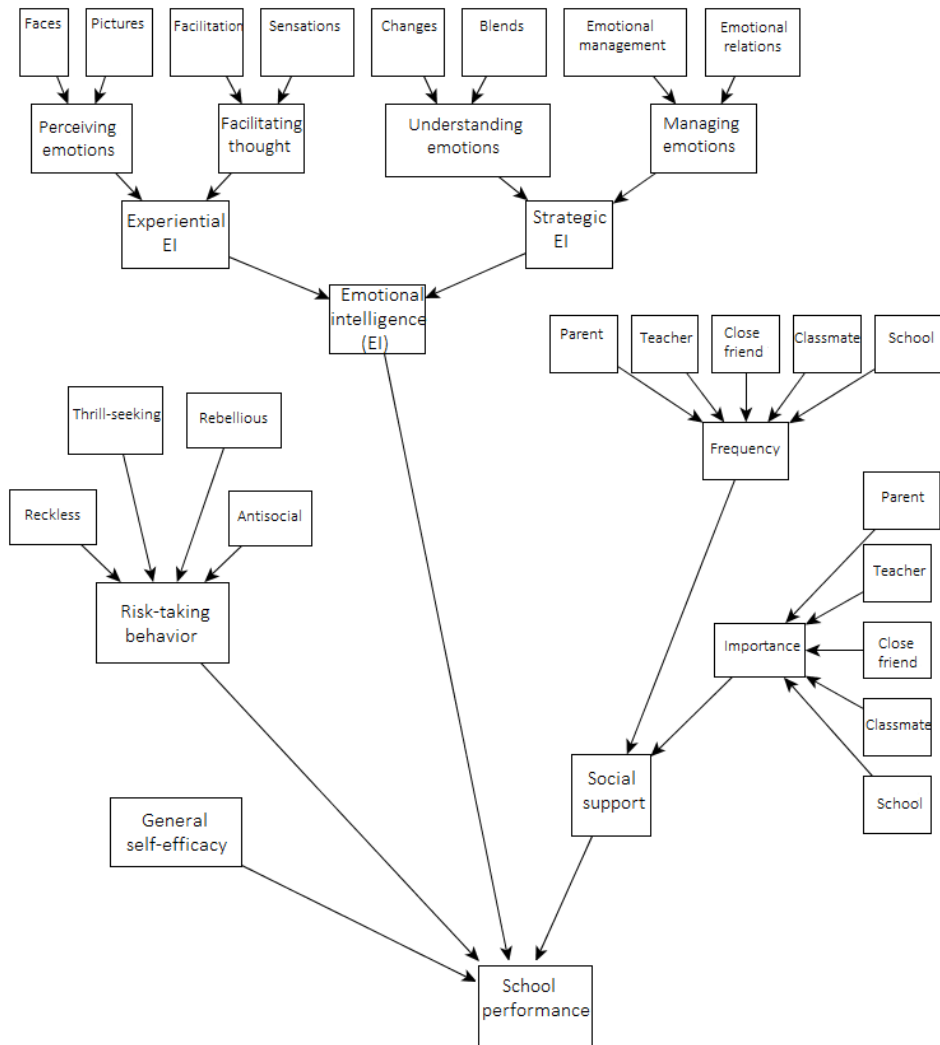


Fig.2. Conceptual model of school performance predictors, including sub factors of the variables of interest.

Furthermore, based on the results obtained in the previous stages of the statistical analysis, predictive models were built and tested via pathway analysis. Subsequently, for statistically significant pathway models, gender and high school invariance calculations were computed.

Finally, the associations between psychosocial variables were examined by generating the bivariate correlation matrix and by testing individual predictive models. All statistical analyzes were conducted in IBM SPSS Statistics 20 (2011) and AMOS 20 (Arbuckle, 2011). The results are presented below.

3.4.4. Results

Data sample diagnosis

The normality of distribution of the variables used in the predictive models has been inspected both by calculating skewness and kurtosis values and by analyzing the Q-Q Plots. The results suggested that the data did not show significant deviations from normality, except for the Reckless subscale scores of Risk-taking behavior and the Strategic Area of EI, with values exceeding +1. The homogeneity of the variance was analyzed by inspecting the residual values diagram and the scatterplots and it was found that the homoscedasticity assumption was satisfied.

Furthermore, the pattern of missing data was inspected. Data was substituted with the "person-mean" method (*i.e.* the average of answers' scores given by a participant to a particular questionnaire) and "variable mean" (*i.e.* the average of the answers' scores given by all respondents to a particular item). In order to keep the data variation as high as possible, the maximum absence of data was chosen at 5% level. All cases displaying a number of missing answers exceeding this threshold, both vertically (*i.e.* items) and horizontally (*i.e.* individual responses per scale) were removed from the analysis.

Descriptive statistics

Descriptive data on study participants are displayed in Figures 3-4. Figures 5-6 show distributions and density functions for grades' averages.

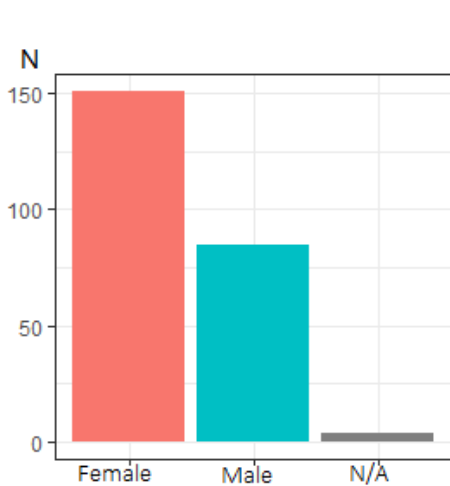


Fig. 3. Gender distribution of participants

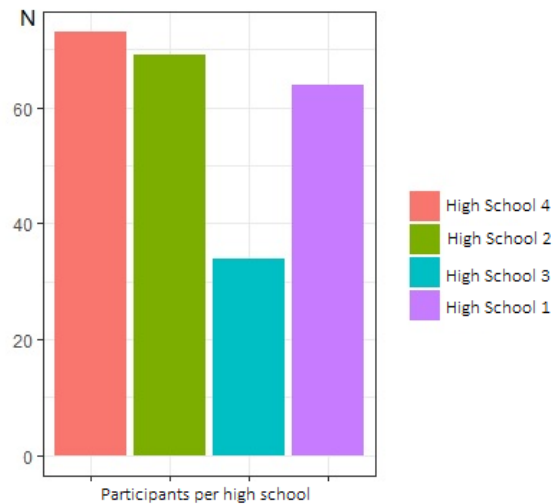


Fig.4. High school distribution of participants

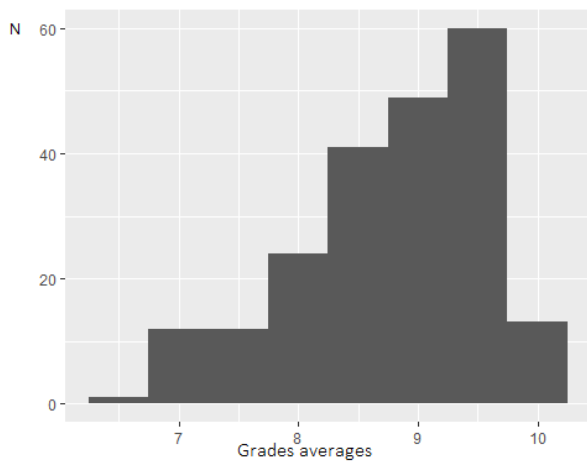


Fig. 5. Graphical representation of grades' averages density.

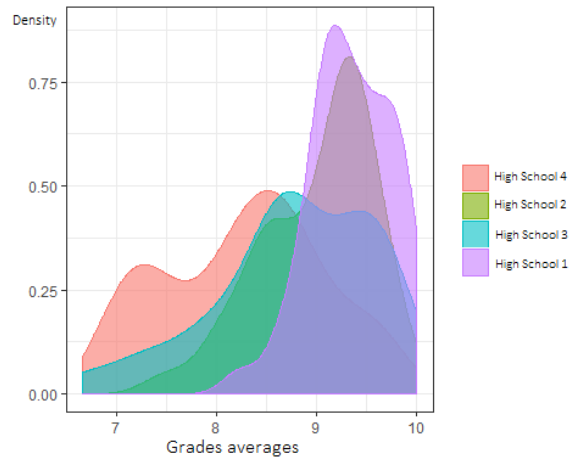


Fig. 6. Graphical representation of grades' averages density per high school (overlaid).

Graphical representations of the grades' average densities has highlighted higher grades averages' in students of higher ranked high schools, compared to students' grades averages in lower ranked schools (Note: ranking based on the admission grades in 9th grade). This result may be viewed as an initial indicator of school performance disparities preservation, from admission (in 9th grade) to the last years of high school (*i.e.* 11th and 12th grade). These differences will be explored in the following subchapters through specific statistical procedures.

Descriptive data of EI variables (Table 1) has shown that participants had the lowest mean scores on Strategic EI. At this point of the statistical analysis, the result can be seen as an early indicator of the need for intervention to improve the emotional abilities of strategic EI, according to the interpretation recommendations of MSCEIT editors (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011).

Table 1
Descriptive statistics of emotional intelligence variables

	N	Min. value	Max. value	M	SD
Perceiving emotions	176	63.00	124.00	104.05	11.85
Experiential EI	164	50.00	124.00	98.73	13.90
Using emotions to facilitate thought	164	50.00	122.00	94.03	14.90
Total EI	154	50.00	118.00	93.51	14.07
Understanding emotions	160	50.00	117.00	92.08	14.39
Managing emotions	154	50.00	120.00	89.79	15.77
Strategic EI	154	51.00	114.00	89.59	14.03

Note. Variables sorted descending according to the mean of the grades' averages; *M*=mean; *SD*=standard deviation.

The exploratory statistical analyzes of the raw data highlighted relevant aspects regarding the adequacy of the data for the proposed statistical analyzes. For instance, the frequency distributions for the ARQ-b questionnaire items (Gullone, Moore, Moss & Boyd, 2000) suggested significant deviations from normality, which is an early indicator of low construct loadings. Therefore, subsequent analyzes included the sequential processing of each of the hypothesized predictors in relation to the predicted variable.

Correlation analysis

Product-moment Pearson correlation analysis results revealed positive significant associations between school performance measured by grades' averages and EI, respectively risk-taking behavior (see Table 2 for details).

Table 2
Summary of correlation analysis results between school performance and the hypothesized predictors

Predictor variables	<i>r</i>	<i>p</i>
Total EI	.37	< .01
Experiential EI	.20	< .05
Strategic EI	.44	< .01
Using emotions (to facilitate thought)	.22	< .01
Understanding emotions	.42	< .01
Managing emotions	.31	< .01
Faces	.23	< .01
Sensations	.22	< .01
Blends	.32	< .01
Changes	.37	< .01
Emotion management	.23	< .01
Emotional relations	.31	< .01
Total Risk-taking behavior	-.21	< .01
Thrill-seeking	.15	< .05
Rebellious	-.26	< .01
Reckless	-.40	< .01
Teacher social support - Importance	.14	< .05

Note. Only statistically significant results are listed; Criterion variable=students' grades averages

Based on the correlation analysis results risk-taking behavior and emotional intelligence, measured at the most general level (*i.e.* total scores) were used in the subsequent analyzes. Predictive models were tested for both variables.

Simple regression analysis

The individual predictive effect of the hypothesized parent-variables was analyzed by testing simple regression models. The results of the predictive models which have reached statistical significance levels are presented below.

Model 1. Emotional Intelligence predicts school performance. A simple regression model was used to analyze the predictive effect of emotional intelligence (EI), which indicated that EI is a significant predictor of school performance, measured by the grades' averages, $F(1, 147) = 23.54$, $p < .001$, being positively associated with it ($B = .18$, $\beta = .37$). The predictor explains 14% ($R^2 = .14$) of the school performance variance.

Model 2. Risk-taking behavior predicts school performance. A simple regression model was used to analyze the predictive effect of risk-taking behavior and the results indicated a significant predictor effect on school performance, $F(1, 210) = 9.76$, $p = .002$, the two variables being negatively associated ($B = -.014$, $\beta = -.21$). The individual predictor explained 4% ($R^2 = .04$) of the school performance variance.

Model 3. Emotional intelligence and risk-taking behavior predict school performance. In order to analyze the predictive capacity of emotional intelligence and risk-taking behavior, a simple regression model was used, indicating that both are significant predictors for school performance, $F(2, 146) = 12.77$, $p < .001$, and taken together, the predictors explained 15% ($R^2 = .15$) of the school performance variance.

Pathway analysis

According to the Amos 20 technical manual (see Arbuckle, 2011) when the maximum probability estimation method is used in the analysis, and some exogenous variables are introduced as fixed variables, a data distribution deviated from normality should not cause biased results, as long as the other exogenous variables display a normal distribution (Arbuckle, 2011). However, to avoid biased results, specific data modeling techniques are recommended when handling non-normally distributed data (Arbuckle, 2011; Harlow, 1986; Warrington et al., 2014): maximum probability estimation and bootstrap method. Consequently, in line with the literature recommendations, maximum probability estimation and bootstrap was used in the process of model testing.

Observed variables models. The predictive models were built based on the observed relationships between the variables, highlighted by the previous steps of the statistical analysis. Based on the results of the correlation analysis (Table 2), a six-factor pathway predictive model of school performance was built and tested (Figure 7). Models' diagrams based on natural data processing (*i.e.* before operating trimming or substitutions) are presented below.

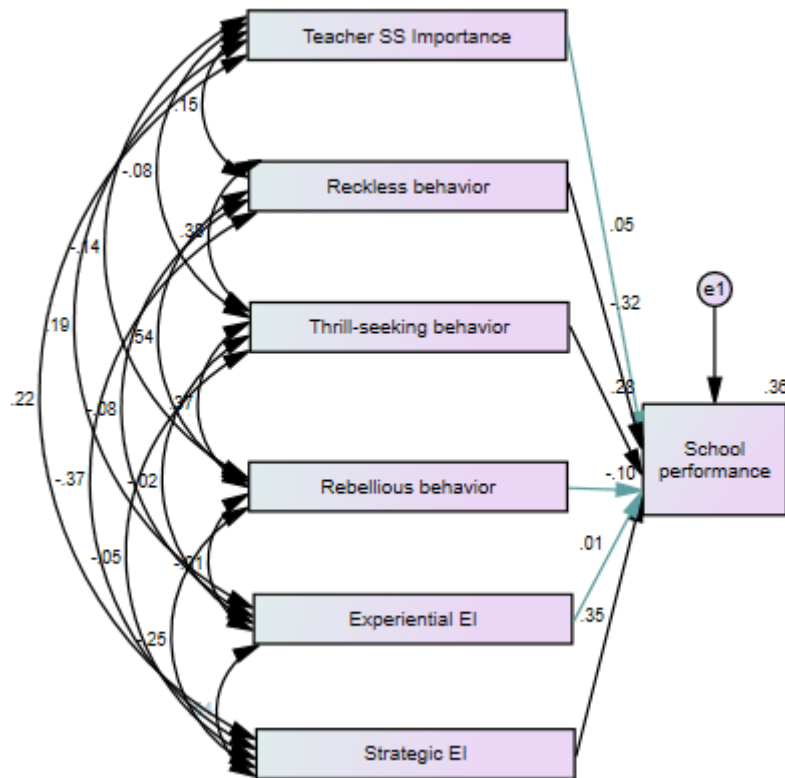


Fig.7. Simultaneous modeling of the five predictors identified as significantly correlated with school performance (Model 1).

The results revealed that after all relationships were considered simultaneously in the model, only the strategic area of emotional intelligence, the reckless behavior and thrill-seeking subscales of risk-taking behavior were significant predictors of school performance, $p < .05$. Based on these results, the model has been respecified and tested. The statistically insignificant predictors were eliminated, namely the importance of teacher social support and the rebellious component of risk-taking behavior (Figure 8).

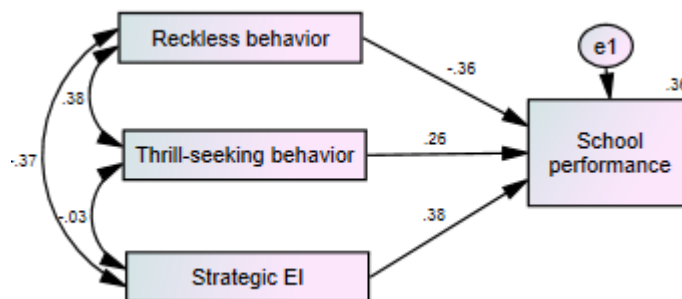


Fig. 8. Simultaneous modeling of reckless behavior, thrill-seeking behavior and strategic emotional intelligence as predictors of school performance (Model 2).

The three predictors, modeled simultaneously (*i.e.* reckless behavior, thrill-seeking and the strategic area of EI), explained 36% of the school performance variance, $p < .001$.

Given that a positive predictive effect of thrill-seeking behaviors has been observed, we have decided to investigate this relationship more deeply. Specifically, although previous studies have shown that particular thrill-seeking behaviors can positively relate to new skills development (see Theoretical background), we were particularly interested in the relationship between item number 17 of the thrill-seeking subscale and school performance. Unlike the other

items included in the subscale, which measure the frequency of practicing sports, flying by plane or participating in competitions, item number 17 refers to school absenteeism. The analysis found that although the overall subscale score positively predicted school performance, as expected, item 17 was a negative predictor of school performance, $F(1.210) = 24.38$, $\beta = -.323$, $R^2 = .11$, $p < .000$. The negative predictive effect of the item is diluted due to the positive predictive effect of the other component items of the scale on school performance.

Latent variable models. The former tested model presented statistically significant results, therefore, a second order path model was developed, in which the strategic area of emotional intelligence was entered as a latent factor, consisting in two component factors: managing emotions and understanding emotions. Based on the results of the exploratory factorial analysis, a model in which risk-taking behavior is entered as a latent variable, could not be identified. Therefore, it was decided to introduce risk behaviors into the model as an observed factor.

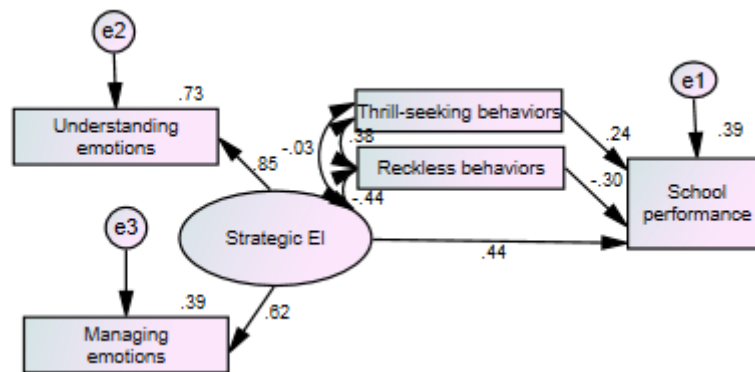


Fig. 9. Simultaneous modeling of the strategic area of emotional intelligence, introduced as latent variable, reckless, thrill seeking behavior and school performance (Model 3).

The pathway model (Figure 9) is statistically significant, $p < .001$ and explains 39% in school performance variance. Analyzing the standardized coefficients of regression, it was found that among the tested factors, the strategic emotional intelligence introduced as a latent factor had the strongest predictive effect, followed by reckless and thrill-seeking behavior.

Data cleansing. Replication of the pathway models. In order to limit the possibility of occurrence of Type I or II errors and to reconfirm the estimated parameters obtained in the previous models, with natural data, we decided to treat the data collection and to retest the models. Specifically, the procedure unfolded as it follows:

Step 1 - Elimination. In the first phase, the cases with high recordings of missing values were eliminated. In 86 of the cases 42% of missing values on emotional intelligence measurements was recorded. Subsequently, cases with missing values pattern were eliminated (*i.e.* 5 cases with missing values on the CASSS questionnaire: one case missing data completely and four cases with missing data for individual subscales).

Step 2 - Substitution/ Imputation. After the eliminations performed in the first procedural step, the Little Test (Little, 1988) was performed to verify whether the remaining missing data was randomly distributed along the observations. The results of the test were insignificant, $p > .05$, which indicates a completely random distribution of the missing data (MCAR). If the missing data is completely random distributed and there is a low percentage of missing data (e.g. less than 5%), it is recommended to substitute the values using the maximum expectancy algorithm (EM), which provides unbiased parameter estimates and improves the statistical power of the analysis (according to Enders, 2001 and Scheffer, 2002). Consequently, for all variables, the missing data was replaced with the maximum expectancy algorithm in IBM SPSS 20 (2011),

and the diagrams were built in AMOS 20 (Arbuckle, 2011). The results of the pathway analysis, based on treated data are presented below (Figures 10-14).

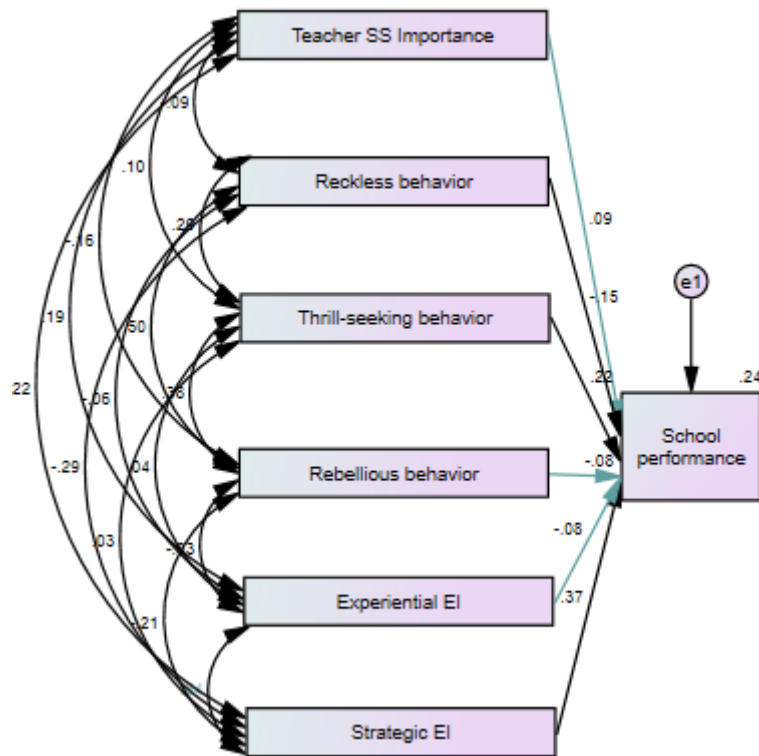


Fig. 10. Simultaneous modeling of the five predictors identified as significantly correlated with school performance (Model 1 with substituted data).

According to the results, the model is statistically significant, $p < .05$ and explains 24% of school performance variance (Figure 10). The predictive effects of: (1) the importance of parent and teacher social support, (2) rebellious behavior and (3) the experiential area of EI on the criterion variable have become statistically insignificant. Therefore, the model was respecified, retaining in the analysis the statistically significant predictive variables.

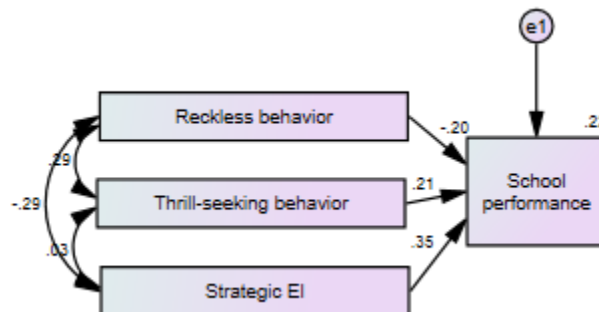


Fig. 11. Simultaneous modeling of reckless behavior, thrill-seeing behavior and strategic emotional intelligence as predictors of school performance (Model 2 with substituted data).

The three predictors, modeled simultaneously (Figure 11), explained 22% of school performance variance, $p < .05$. Consequently, similar to the natural data pathway analysis, the strategic area of emotional intelligence was introduced in the next step as a latent factor.

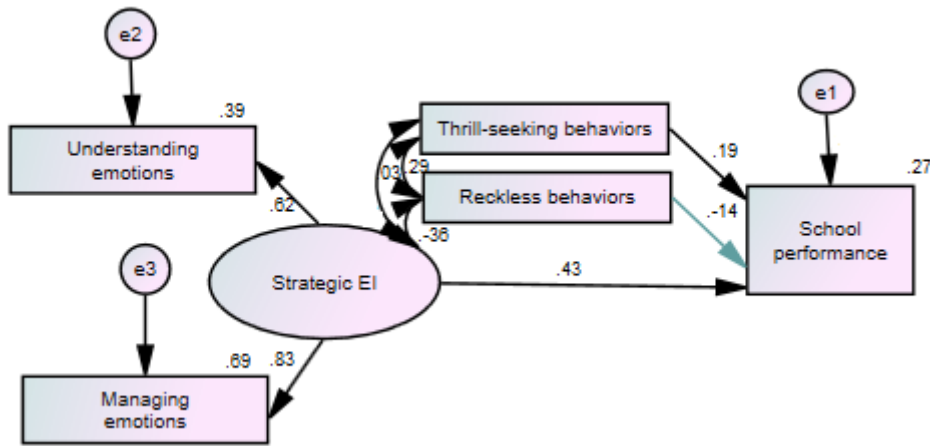


Fig.12. Simultaneous modeling of the strategic area of emotional intelligence, introduced as latent variable, reckless behavior, thrill seeking behavior and school performance (Model 3 with substituted data).

Unlike the natural data modeling, the treated data model testing, in which the risk-taking behaviors and the strategic area of emotional intelligence, entered as a latent factor, were modeled simultaneously (Figure 12), the relationship of reckless behavior with school performance was statistically insignificant, $p = .14$. Hence, the predictor was removed and the model was respecified.

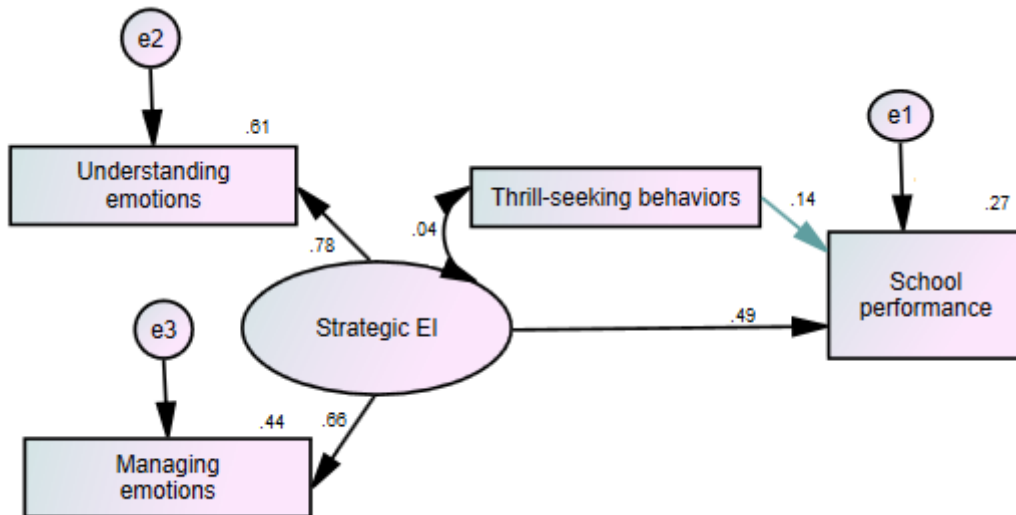


Fig. 13. Simultaneous modeling of the strategic area of emotional intelligence, introduced as latent variable thrill seeking behavior and school performance (Model 4 with substituted data).

Testing the predictive model illustrated in Figure 13 has revealed that the relationship between thrill-seeking behavior and school performance, measured by grades' average, is not statistically significant, $p = .069$. Therefore, this model does not represent adequately the observed data. Hence, an alternative model was developed and tested, in which only the strategic area of emotional intelligence, modeled as a latent variable, was entered as a predictor.

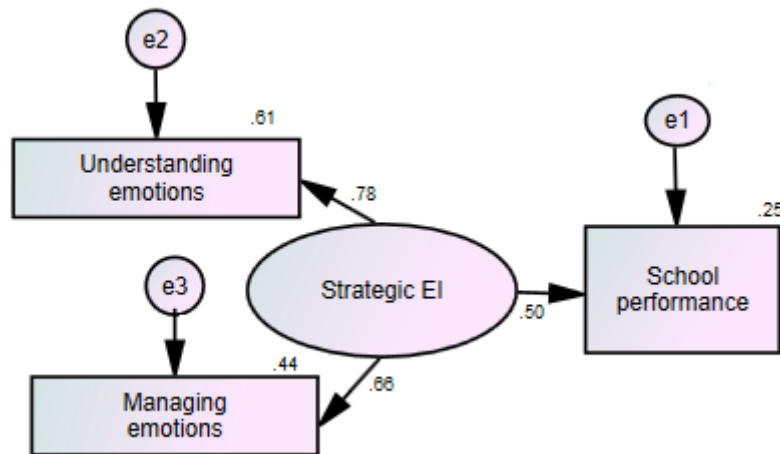


Fig. 14. Simultaneous modeling of the strategic area of emotional intelligence, introduced as latent variable and school performance (Model 5 with substituted data).

The model (Figure 14) explains 25% of the observed variance in school performance, $p < .001$.

The results obtained in the treated data modeling suggest that the data deletion and imputation had a slightly diluting effect on the variance explained by the predictors and the covariance values between the variables. This phenomenon is commonly encountered in research, especially when data is treated by EM method and eliminations and substitutions of missing recordings are being operated. Thus, the results of the treated data modeling have shown that the relationship of risk behavior sub factors with school performance became statistically insignificant. The strategic EI, with its sub factors, was the solely strong predictor of school performance.

Although we attempted to specify a structural equation model, which has the advantage of entering latent variables and allows natural manipulation of multiple indicators of the same superordinate construct, the data collected in this study did not allow this type of analysis for two main reasons: (a) entering the risk-taking behavior as a latent factor would not have been adequate, considering the divergent validity coefficients obtained in this study, and (b) the equality between the free parameters and the known values would have led to the incapacity of estimating the adequacy of the model.

Testing the moderating effect of socioeconomic indicators

In line with the second hypothesis of the study, we tested the interaction of the socioeconomic status variables (*i.e.* parental education and family income) with emotional intelligence, in a prediction model of school performance. The moderating effect was tested for the statistically significant predictive relationships highlighted in the former stages of statistical analysis. The moderation effect was tested using Process extension (Hayes, 2012). The following working hypotheses were formulated:

H1_m: SES indicators are moderating the relationship between the strategic area of emotional intelligence and school performance;

H2_m: SES indicators are moderating the relationship between understanding emotions and school performance;

H3_m: SES indicators are moderating the relationship between managing emotions and school performance;

Table 3

Summary of moderation analysis results of SES indicators on emotional intelligence-school performance relationship

Hypothesis	Variable	<i>t</i>	<i>p</i>	LLCI	ULCI
H1 _m	Mother's educational attainment	.14	.88	-3.30	3.80
	Father's educational attainment	-.03	.97	-3.60	3.48
	Family income	.64	.52	-1.69	3.31
H2 _m	Mother's educational attainment	1.20	.22	-1.32	5.47
	Father's educational attainment	.98	.32	-1.76	5.31
	Family income	.89	.38	-1.37	3.60
H3 _m	Mother's educational attainment	-.86	.39	-6.10	2.39
	Father's educational attainment	-.96	.33	-6.20	2.13
	Family income	.13	.89	-2.73	3.13

Note. *t*=test statistics; *p*=significance level; LLCI/ULCI= lower and upper levels of confidence interval.

Based on the results presented in Table 3, the hypothesis were rejected, $p > .05$.

Invariance analysis

Invariance analysis was run for the significant predictive pathway models, respectively Model 2 and Model 5 (Figure 11 and Figure 14). The analysis was run for the overall model and the individual paths, as well, by gender and per high school.

Gender invariance. Model 2. The results suggested insignificant gender differences for the overall model, $\chi^2(3) = 3.04$, $p = .38$. However, the simultaneous modeling of: (a) reckless behavior and (b) thrill-seeking with school performance, revealed that the predictive effect of the fore mentioned variables became statistically insignificant for female participants, $p = .99$, respectively $p = .21$. Therefore, there may be gender differences at the individual path level. Consequently, based on the available data in the relevant literature (Macinko, Mullachery, Silver, Jimenez, & Neto, 2015; Gullone & Moore, 2000; Gullone, Moore, Moss & Boyd, 2000; Cabello, Sorrel, Fernández-Pinto, Extremera, & Fernández-Berrocal, 2016), the following working hypotheses were issued:

I1i: The effect of reckless behavior on school performance is stronger in males;

I2i: The effect of thrill-seeking behavior on school performance is stronger in males;

I3i: The effect of strategic emotional intelligence on school performance is stronger in females;

The results (Table 4) have shown that there are no significant differences between males and females for the tested predictive paths. Specifically the relationship between (a) reckless behavior, (b) thrill-seeking behavior and (c) strategic emotional intelligence with school performance does not differ by gender. Hence, the working hypotheses were rejected.

Table 4

Summary of gender differences analysis on the predictive relationship between risk-taking behavior strategic emotional intelligence and school performance

Hypothesis	χ^2	<i>p</i>
H1 _i	2.57	.11
H2 _i	.07	.93
H3 _i	.26	.61

Note. df (degrees of freedom)=1; χ^2 = Chi-squared; *p*=significance level.

Gender invariance. Model 5. Chi-square test results revealed that the relationship between strategic emotional intelligence and school performance does not vary by gender, $\chi^2(1) = .37, p = .54$

High school invariance. The results of the Chi-square test suggested that the overall pathway Model 2 does not vary by high school. Similar results were found for the individual paths of the model, $p > .05$. Moreover, no significant differences were found between the high schools participating in the study across the predictive relationships described by Model 5, for both the overall model and the individual pathways.

Analysis of school performance differences by high schools

The Independent Samples t Test (Student, 1908) was conducted to compare the school performance of students enrolled in lower quartile and upper quartile ranked high schools. The results highlighted significant school performance differences between students' enrolled in lower ranked high schools ($M = 8.27, SD = .79$) and higher ranked schools ($M = 9.34, SD = .40$), $t(110) = 8.23, p < .001$.

Psychosocial characteristics analysis

In order to test the third hypothesis, firstly a correlation analysis was run (see Table 5 and 6 for correlation matrix). Secondly, based on the results of the correlation analysis, individual prediction models were specified and tested.

Initially, EI variables with a high degree of generality, namely total emotional intelligence, experiential area and strategic area, were introduced in the prediction models. The statistically significant prediction coefficients are available in Table 7. Overall EI was a significantly predicted individual risk-taking behavior categories and specific dimensions of social support.

Subsequently, variables' sub factors were introduced in individual prediction models. Figure 15 summarizes the significant predictive relationships between the variables' sub factors.

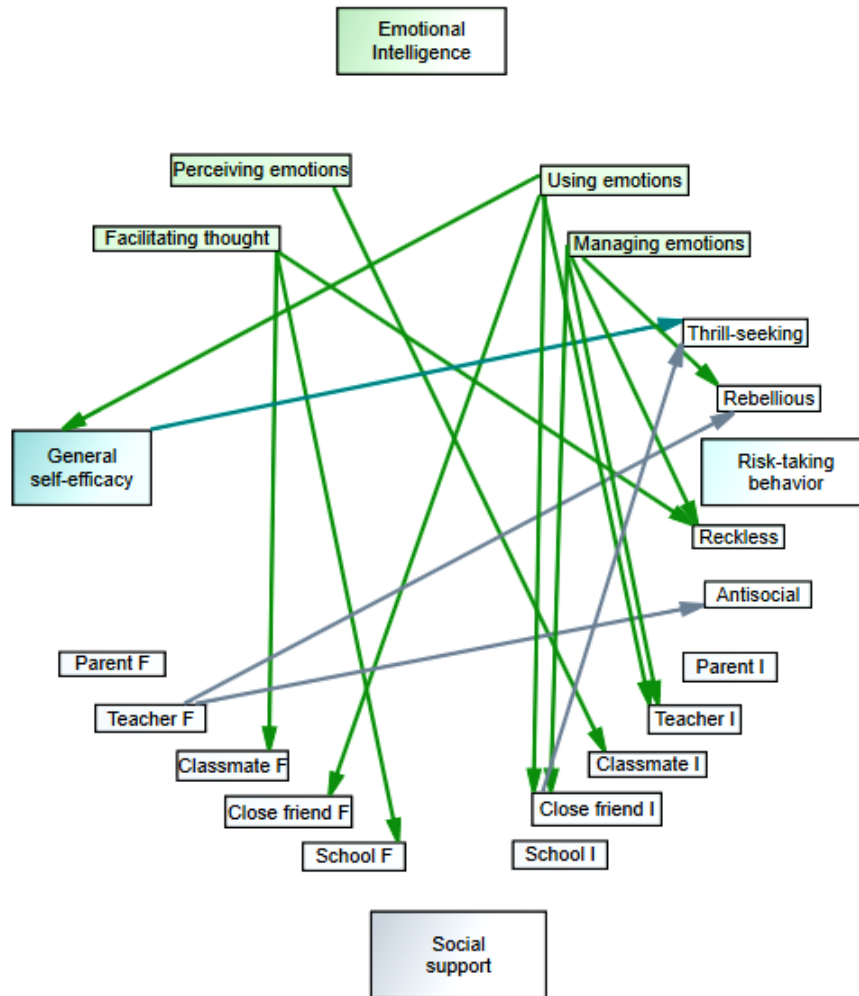


Fig. 15. Summary of statistically significant predictive effects of the psychosocial variables' sub factors. Relationship direction is indicated by arrows. F = the frequency of social support, I = the importance of social support.

Perceiving emotions was a significant predictor of the self-reported importance of classmate social support, $F(1,135) = 8.22$, $\beta = -.24$, $R^2 = .06$, $p < .05$. The facilitating thought dimension of EI predicted teacher social support, $F(1,135) = 8.54$, $\beta = .24$, $R^2 = .06$, $p < .005$, as well as the frequency and importance of close friend social support $F(1,135) = 11.63$, $\beta = .28$, $R^2 = .08$, $p < .001$, respectively $F(1,135) = 25.80$, $\beta = .40$, $R^2 = .16$, $p < .000$. Of all the EI branches, facilitating thought was the only significant predictor of self-efficacy, $F(1,135) = 5.92$, $\beta = .20$, $R^2 = .04$, $p < .05$. Understanding emotions was a strong predictor of reckless behavior, $F(1,135) = 15.30$, $\beta = -.32$, $R^2 = .10$, $p < .001$ and self-reported frequency of classmate social support, $F(1,135) = 4.25$, $\beta = -.17$, $R^2 = .03$, $p < .05$ and from school, $F(1,135) = 4.25$, $\beta = -.17$, $R^2 = .03$, $p < .05$. Managing emotions significantly predicted two categories of risk-taking behavior: reckless behavior, $F(1,135) = 4.60$, $\beta = -.18$, $R^2 = .03$, $p < .05$ and rebellious behavior, $F(1,135) = 7.16$, $\beta = .22$, $R^2 = .05$, $p < .05$. Managing emotions was a predictor of teacher social support importance, $F(1,135) = 8.51$, $\beta = .24$, $R^2 = .06$, $p < .005$ and close friend social support importance, $F(1,135) = 5.66$, $\beta = .20$, $R^2 = .04$, $p < .05$.

General self-efficacy, along with the importance of social support from close friend, were individual predictors of thrill-seeking behavior $F(1,135) = 9.15$, $\beta = .25$, $R^2 = .06$, $p < .005$, respectively $F(1,135) = 4.26$, $\beta = .17$, $R^2 = .03$, $p < .05$. Teacher social support frequency predicted antisocial behavior, $F(1,135) = 7.23$, $\beta = -.22$, $R^2 = .05$, $p < .05$ and rebellious behavior $F(1,135) = 12.82$, $\beta = -.29$, $R^2 = .09$, $p < .001$.

Table 5
Psychosocial variables correlation matrix

	1 Total EI	2 EEI	3 SEI	4 EI Branch II	5 EI Branch III	6 EI Branch IV	7 Total Risk-taking	8 Thrill-seek	9 Rebellious	10 Reckless	11 Antisocial	12 Total SS F	13 SS Parent F	14 SS Classmate F	15 SS Teacher F	16 SS teacher I	17 SS Close friend F	18 SS Close friend I	19 General Self-efficacy
1	-	-	-	-	-	-	-21**	-	-	-	-	-	-	-	-	21**	-	25**	-
2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20*	34**	22*
3			-	-	-	-	-	-	-22**	-28**	-	-	-	-	-	20*	-	-	-
4				-	-	-	-	-	-	-	-	-	-	-	-	20**	23**	37**	-
5					-	-	-	-	-	-29**	-	-	-	-	-	-	-	-	-
6						-	-	-	-24**	-	-20**	-	-	-	-	21**	-	-	-
7							-	-	-	-	-	-	-	-	-	-	-	-	-
8								-	-	-	-	-	-	-	-	-	-	-	22**
9									-	-	-	-	-	-	-28**	-	-	-	-
10										-	-	-	-25**	-	-25**	-	-	-	-
11											-	-	-	-	-23**	-	-	-	-
12												-	-	-	-	-	-	-	32**
13													-	-	-	-	-	-	28**
14														-	-	-	-	-	24**
15															-	-	-	-	-
16																-	-	-	-
17																	-	-	36**
18																		-	21**
19																			-

Note. Only $r \geq .20$ coefficients are listed; Decimals omitted; EI=emotional intelligence; EEI=experiential emotional intelligence; EIS=strategic emotional intelligence; SS=Social support; F=Frequency; I=Importance; ** $p < .01$; * $p < .05$.

Table 6

Summary of Pearson bivariate correlation analysis of psychosocial variables and EI tasks (N=240)

Variable	Faces	Pictures	Sensations	Facilitation	Blends	Changes	Emotional management	Emotional relations
Total risk-taking	-	-	-	-	-	-	-	-.22**
Rebellious	-	-	-	-	-	-	-	-.26**
Reckless	-	-	-	-	-.25**	-.26**	-	-
Antisocial	-	-	-	-	-	-	-	-.22**
Close friend SS F	-	-	26**	-	-	-	-	-
Close friend SS I	20**	-	37**	21**	-	-	21**	-
Self-efficacy	-	-	-	-	-	-	.20**	-

Note. Only $r \geq .20$ coefficients listed; ** $p < .01$; * $p < .05$; MSCEIT (Mayer, Salovey, Caruso, Iliescu, & Livinți, 2011).

Table 7

Regression analysis results of the EI dimensions on psychosocial factors

	Total EI		Experiential EI		Strategic EI	
	<i>F</i> (df)	R^2	<i>F</i> (df)	R^2	<i>F</i> (df)	R^2
Reckless behavior	$F(1,135)=5.59$	.04	-	-	$F(1,135)=12.08$	.08
Rebellious behavior	-	-	-	-	$F(1,135)=5.92$	.04
Antisocial behavior	-	-	-	-	$F(1,135)=4.12$	.03
General self-efficacy	-	-	$F(1, 135) = 6.39$	.04	-	-
Teacher SS F	-	-	-	-	-	-
Teacher SS I	$F(1,135)=7.82$	.05	$F(1,135)=5.20$	.04	$F(1,135)=6.97$	.05
Close friend SS F	$F(1,135)=5.32$	.04	$F(1,135)=8.79$	.06	-	-
Close friend SS I	$F(1,135)=11.17$	.08	$F(1,135)=17.46$	.12	-	-

Note. $p < .05$; SS=Social support; F=frequency; I=importance; df=degrees of freedom; R^2 =determination coefficient; F =F-distribution; p =level of statistical significance.

3.4.5. Discussion, conclusions and limits

The purpose of this study was to identify key intervention factors that may have a positive effect on students' high school performance. The objectives of the study were (1) to identify psychosocial predictors of students' performance, (2) to test a moderating effect of socioeconomic status indicators on the relationships between psychosocial factors and school performance, 3) to investigate the relationships between students' psychosocial characteristics.

The *first hypothesis* outlined a predictive effect of psychosocial factors (emotional intelligence, risk-taking behavior, social support, general self-efficacy) on student performance. The hypothesis is partially confirmed by the results obtained in this study.

At the **first level of analysis** (*i.e.* overall scores of the variables), total emotional intelligence and total risk behavior were significant individual predictors of school performance. Similarly, other studies have found a predictive effect of total emotional intelligence and risk behaviors on students' grades' average at the end of the school year (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006; Chau et al., 2016). Unlike other studies, which identified direct effects of total social support on school performance (Malecki & Demaray, 2006), in this study, there was no significant predictive relationship between the two variables. Also, in this study, general self-efficacy was not a predictor of school performance.

Furthermore, at **the second level of analysis** (*i.e.* that of the sub factors) of the constructs, it was found that (a) the experiential area and the strategic area of emotional intelligence, (b) reckless, rebellious and thrill-seeking behaviors, as well as (c) teacher social support are significant individual predictors of high school performance. In line with these results, other studies have identified a negative association between risk-taking behaviors, such as reckless or rebellious behaviors (e.g. substance abuse or risky sexual behaviors) and school performance (Chau et al., 2016; Luster & Small, 1994). In the present research, thrill-seeking behaviors were positively associated with school performance. Other studies have found similar relationships between thrill-seeking behaviors (e.g. practicing a sport or entering a competition), and positive educational or behavioral outcomes, such as higher school performance (Broh, 2002), lower school dropout rates (Mahoney & Cairns, 1997) and lower rates of substance abuse (Eccles & Barber, 1999). Regarding teacher social support, we failed to identify previous investigations on the predictive effect of this variable on school performance, measured by grades' average.

On **the third level of the statistical analysis** (*i.e.* that of the dimensions of the investigated sub factors), it was found that individual EI branches (*i.e.* facilitating though, understanding emotions and managing emotions) are significant predictors of school performance. The results of this study suggest that the third and the fourth branch of emotional intelligence, comprised of high complexity emotional abilities, are more robust predictors of school performance, compared to the first and the second EI, which encompasses lower complexity emotional skills. This result is consistent with the results reported by previous studies (see MacCann, Fogarty, Zeidner & Roberts, 2011). Moreover, similarly to the relationships found in other studies, facilitating thought was the solely experiential EI branch which significantly predicted school performance (MacCann, Fogarty, Zeidner & Roberts, 2011).

Comparing the predictive power of each EI branch, it has been found that in the present research, understanding emotions has had the strongest predictive effect on school performance. Similarly, another study identified emotional understanding as the only dimension of EI which predicted school performance at significant levels (Mohoric & Taksic, 2016).

Although at the individual level, the predictive relationships described above were statistically significant, during the pathway analysis, the relations of risk behavior variables and teacher social support with school performance have become statistically insignificant, the only significant predictor being the strategic area of emotional intelligence, explaining 25% of the variance in school performance. This result satisfies the determination coefficient interpretation

rule stated by Falk & Miller (1992), according to which the explained variance of a particular endogenous construct is adequate at a value equal to or greater than .10. The results of the multi-group invariance analysis did not reveal statistically significant gender or high school differences on the relationship between risk-taking behavior, emotional intelligence and school performance. This result may convey that implementing an intervention program targeting the identified school performance predictors might be equally beneficial for both male and female adolescent population.

The *second hypothesis* of the study stated a moderating effect of socioeconomic status indicators (parental education, family income) on the relationship between psychosocial factors and school performance. The moderation analysis did not lead to statistically significant results. Therefore, the results hypothesis was rejected.

The *third hypothesis* of this study has announced significant relationships between the EI dimensions, and risk-taking behavior, social support and general self-efficacy beliefs. The results obtained in this study supported the hypothesis and the practical implications can be extended beyond educational settings. The strategic area of emotional intelligence mainly predicted risk-taking behavior categories, while the experiential EI predicted general self-efficacy and specific dimensions of social support.

Regarding the EI sub factors, a number of significant predictive effects have been noted. Thus, the variable perceiving emotion had a negative predictive effect on classmate social support importance. A possible explanation of this result is that a more developed ability to identify one's own emotions and other's emotions, taken together with an effective understanding of context-sensitive emotional differences (*i.e.* subordinated skills of perceiving emotions branch; Mayer, Caruso & Salovey, 2016) may determine a lower need for classmate social support. Facilitating thought (*i.e.* EI's second branch) was the only significant predictor of self-efficacy. The second branch of EI encompasses emotional skills such as leveraging mood shifts to generate different cognitive perspectives or selecting problems based on how one's ongoing emotional state might facilitate cognition (Mayer, Caruso & Salovey, 2016). Such emotional abilities might positively support the problem-solving process and indirectly shape positive self-esteem beliefs. Furthermore, understanding emotions and managing emotions were found as individual predictors of reckless behavior. These results may facilitate the development of interventions targeting reckless behavior in adolescence. Among the EI dimensions investigated in this study, emotion management was the only predictor of rebellious behavior. Alongside the management of emotions, the frequency of teacher social support was an individual predictor of rebellious risk behavior.

Furthermore, higher frequency of teacher social support predicted lower (self-reported) anti-social behaviors and rebellious behaviors engagement. This result highlights the importance of the school-family partnerships for adolescent's positive development and suggests further directions of intervention on risk behaviors in the educational environment.

The analysis of high schools differences in students' school performance revealed significant differences between students enrolled in higher quartile high schools (ranked according to 9th grade admission grades) and students enrolled in lower quartile schools. Future studies may investigate the multidimensional factors that maintain performance disparities (from 9th grade to the final years of high school): student-related factors (e.g. intrinsic and extrinsic), teacher-related factors (e.g. training, teacher-student communication) and school-related factors (e.g. educational standards).

The results presented in this paper may be further used in developing intervention programs to promote school performance and prevent school dropout, specifically, and to promote the positive psychosocial development of the adolescent students, in general. Nevertheless, this study has some limitations. Grades' averages were used as a school performance measure. Although this indicator is extensively used in research (e.g. Easton,

Johnson & Sartain, 2017; Hogan, 2009; Parker et al., 2004; Downey, Mountstephen, Lloyd, Hansen, and Stough, 2008), some authors recommend the use of combined measures of school performance (see York, Gibson & Rankin, 2015).

3.5. A systematic analysis of interventions targeting emotional abilities development in school setting

3.5.1. Introduction

A number of previous studies have linked individual emotional abilities to positive educational outcomes (Gil-Olarte Márquez, Palomera Martín & Brackett, 2006; MacCann, Fogarty, Zeidner & Roberts, 2011). Although the data international studies results repeatedly draws attention on the potential benefits of interventions targeting to develop students' emotional abilities (Brackett, Rivers, Reyes & Salovey, 2012; Di Fabio & Kenny, 2011; Ruiz-Aranda et al., 2012), we failed to identify such interventions or guidelines addressing the development of emotional intelligence abilities in a Romanian high school students' sample.

The results obtained in the fourth study of this doctoral research suggested the necessity to develop some of the emotional intelligence abilities of the Romanian high school students (according to the interpretation guidelines, Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011). The positive effects of emotional abilities on adolescents' school performance are supported by both international studies results and the results obtained in the fourth study of this paper. These findings, taken together with the lack of programs addressing emotional abilities development in school setting, in Romania, draw attention on the need to identify effective ways to deliver emotional education.

Hence, in this study we will conduct a systematic analysis of the international evaluation studies of interventions targeting to develop emotional abilities in school settings. The aim of this study is to identify key aspects related to program design, implementation and evaluation (e.g. program goals, implementation methods, implementation effects, etc.). Also, through this study we aim to identify essential methodological aspects of the program evaluation studies.

3.5.2. Methodology

Scientific databases were searched for evaluation studies of interventions or programs aiming to develop emotional abilities in adolescence, in schools.

Procedure

The literature search was conducted between the 15th of February, 2018 and 1st of April, 2018, in the following databases: SCOPUS, Science Direct, Wiley Journals 2016, EBSCOhost, Taylor & Francis, Web of Science, Springer Link Journals, ERIC and Google Scholar. The search was based on key word combinations, from four main categories, corresponding to the concepts of interest: (a) emotional intelligence: *emotional intelligence, emotional competencies, emotional abilities*, (b) school: *school setting, academic setting, educational setting*, (c) adolescence: *adolescents, teens, adolescence* and (d) program: *program, training, development, intervention, enhancement*.

Selection criteria

Firstly, the studies were retained based on the correspondence of the title and summary to the topic of interest and the key words. Subsequently, the full text of the studies was accessed. The following inclusion criteria has been applied: (a) full text access, (b) full text written in English, (c) studies conducted between 2000-2018, (d) quasi-experimental evaluation studies, (e) interventions targeting global emotional intelligence or particular emotional abilities, (f) at least

one intervention, (g) programs implemented in schools on adolescent students (*i.e.* early, middle or late adolescence, 11-19 years).

3.5.3. Results

Following systematic searches, 15512 studies have been identified. Based on the correspondence of the title and summary to the topic of this analysis 48 studies were retained. A number of 6 studies were duplicates and have been eliminated. Also, studies evaluating the effectiveness of an intervention program on a sample of students ranging from 1st grade to 12th grade were excluded (e.g. Bavarian et al., 2013), as the present analysis is focusing on adolescent population. Last but not least, studies investigating the effectiveness of programs in clinical population or special education students' (e.g. study 3, presented in Merrell, Juskelis, Tran & Buchanan, 2008) were excluded. A total of 13 studies fully complied with the selection criteria and were included in the analysis. Table 1 summarizes the characteristics of the intervention programs presented in the evaluation studies included in the analysis.

A series of intervention programs aimed to develop the overall emotional intelligence abilities in school context (Di Fabio & Kenny, 2011; Garaigordobil & Peña-Sarrionandia, 2015). Other programs have proposed the development of emotional abilities in relation to a number of specific educational aspects such as school performance (Brackett, Rivers, Reyes & Salovey, 2012) or the prevention of school dropout (Dougherty & Sharkey, 2017).

Most of the intervention programs were addressed to the general school population. Intervention sessions took place in schools, and some programs included additional community activities (Dougherty & Sharkey, 2107).

In terms of content, the analysis revealed that some programs focused exclusively on emotional abilities (Ruiz-Aranda et al., 2012), while others included content that aimed to improve students' social skills (Cramer & Castro-Olivo, 2016), self-esteem (Dougherty & Sharkey, 2017), or other aspects. A series of interventions were integrated in the school curriculum (Brackett, Rivers, Reyes & Salovey, 2012), while others were delivered as stand-alone sessions (Di Fabio & Kenny, 2011).

Several programs were delivered by psychologists or teachers previously trained (Brackett, Rivers, Reyes & Salovey, 2012; Dougherty & Sharkey, 2017; Ruiz -Aranda et al., 2012). As for program length, we identified both short-term programs (*i.e.* one month; Di Fabio & Kenny, 2011), as well as long-term programs (*i.e.* three consecutive school years; Coelho, Marchante & Sousa, 2015). Most of the identified programs had weekly one hour intervention sessions (Castillo-Gualda, Cabello, Herrero, Rodríguez-Carvajal, & Fernández-Berrocal, 2018; Merrell, Juskelis, Tran & Buchanan, .

Regarding the theoretical framework of the intervention programs, the presence of diversity was noted. Eight studies have reported interventions based on emotional intelligence theories, such as: "The ability model of EI" (Mayer & Salovey, 1997) "The Mixed Model of EI" (Bar-On & Parker, 2000) and "EI Theory" Goleman (1996). Other programs were based on socio-emotional learning theories (for details see Zins, 2004) or CASEL recommendations (2005).

Tabel 1

Summary of the intervention programs' characteristics presented in the analyzed studies (N=13)

Intervention aims	Study design/ Targeted population/ Location of implementation	Short description of the program/ intervention	Theoretical framework of the intervention	Emotional abilities measures	Program/ sessions', duration and frequency	Delivering personnel	Implementation effects
Brackett, Rivers, Reyes & Salovey (2012)	Developing socio- emotional skills and improving students' performance by providing an optimal learning environment	Quasi-experimental Experimental and control group Universal program Public school students 5 th and 6 th grade Delivered in classrooms U.S.A	The program targets to develop the emotional vocabulary (<i>i.e.</i> words that characterize emotional experiences, e.g. shame, alienation, delight, etc.) Each unit of the program includes several lessons or sequences integrated in classroom instruction, and is focusing on a word that designates an emotional sensation The program is delivered in stages: - emotional vocabulary: introducing the new word - personalized explanations - creating associations between the new word introduced in the emotional vocabulary and current real events - family activity: discussing the new emotional word at home, with family members - discussing in the classroom efficient ways of emotional regulation - writing a creative essay, incorporating the new word, which designates an emotional state	Collaborative for Academic, Social, and Emotional Learning (CASEL) (2005) *	Behavioral Assessment System for Children (Reynolds & Kamphaus, 1992)	An entire school year Teachers previously trained and tested	Better school performance as well as more developed social and emotional skills compared to the control group Teachers reported better performance of program beneficiaries in the following areas: Adaptability, Positive Relationship, Leadership and Learning Participating students reported lower scores for attention or learning issues
Coelho, Marchante & Sousa (2015)	Developing socio- emotional skills and self- esteem	Quasi-experimental Experimental and control group Follow-up measures Universal program Public school students 7 th to 9 th grade Delivered in classrooms Portugal	The structure and content of the intervention followed CASEL recommendations (2005) (details in Belo de Moura Pereira Coelho & Couceiro Figueira, 2011) Socio-emotional skills targeted by the program: - self-awareness (knowledge of one's own emotional states) - social consciousness (identifying other people's emotions and taking their perspective) - emotional self-regulation (managing emotions to positively support thinking) - relationship skills (promoting positive interpersonal interactions through effective emotional management)	CASEL (2005) *	Bateria de Socializacao 3, versioeua portuguezã (Ferreira & Rocha, 2004) Social and Emotional Competences Evaluation Questionnaire Teacher's version (Coelho, Sousa & Marchante,	3 school years 12 weeks/ year A weekly session 60 minutes Educational psychologist	Both students' and teachers' reports have shown increased social consciousness and lower isolation and social anxiety Higher levels of social consciousness and self-control was found in female participants Lower levels of social anxiety was found in males Students with a lower level of socio- emotional skills at the pre-test scores registered a greater increase in these skills as a result of their participation compared to students with developed socio-emotional skills in the pre- intervention phase The effects maintained over time

			- Responsible decision-making (consideration of relevant factors and potential consequences)		2014)			(follow-up)
Castillo, Salguero, Fernández-Berrocal & Balluerka (2013)	Developing emotional intelligence skills, such as: emotion perceptions, evaluation and expression of emotions, emotion awareness, the ability to generate emotions as to facilitate cognitive processes, understanding emotions and regulating emotions to promote emotional/intellectual growth	Quasi-experimental Experimental and control group Randomized distribution Universal program Public school students 7 th to 9 th grade Delivered in classrooms Spain	Students were divided into groups The working groups were re-formed at each meeting as to ensure equal opportunities of interaction and cooperation among all students Based on activities such as games, role playing, projects, reflection activities, or video content-based activities E.g. of activities aiming to develop the ability to perceive, evaluate and express emotions: - identifying a person's emotions in hypothetical scenarios, pictures, artworks - collecting visual material (e.g., photos) to illustrate a certain emotion, - discussion on the perceptible indicators of different emotions	The ability-based model of EI (Mayer & Salovey, 1997)	Interpersonal Reactivity Index, spanish version (Pérez-Albéniz, de Paúl, Etxebarria, Montes, & Torres, 2003)	2 school years 12 sessions/year, distributed over 6 months 60 minutes each session	Psychologists Teachers	Participants aggressive behaviors decreased The level of empathy among male participants increased, whilst the level of personal distress decreased (the result was statistically insignificant for female participants)
Castillo-Gualda, Cabello, Herrero, Rodríguez-Carvajal & Fernández-Berrocal (2018)	Developing the basic skills of emotional intelligence: emotion perception, emotion awareness, emotional facilitation of thought, understanding emotions and managing emotions	Quasi-experimental Experimental and control group Randomized distribution Universal program Public and private school students, 11 to 15 years old Delivered in classrooms Spain	The structure and content of the program are not described in this study (details in Castillo, Salguero, Fernández-Berrocal & Balluerka, 2013)	The ability-based model of EI (Mayer & Salovey, 1997)	Positive and Negative Affect Schedule (Watson, Clark & Tellegen, 1988)	3 school years 12 sessions per year, 60 minutes sessions	Trained psychologists	Following the implementation there was a decrease in students' negative affect and aggressive behaviors
Dougherty & Sharkey (2017)	Reducing the effect of the risk factors and promoting high school dropout by: - decreasing drug use - increasing school performance - decreasing students' emotional distress	Quasi-experimental Experimental and control group Randomized distribution Program targeting drop out prone students Public school students, 12 to 17 years old Delivered in classrooms Complementary activities outside school	The program targeted to: - develop the emotional skills (emotional regulation, self-control and empathy) - develop self-esteem - improve students' decision-making abilities - develop stress-management, anger-control and depressive symptoms management skills - positively influence students' social support perceptions (school, family, peers) The intervention was based on: - day-to-day activities carried out during classes, as regular lessons - occasional activities to strengthen	Learning and control theories (for details see Eggert, Thompson, Herting & Randall, 2001) The conceptual model of school dropout (see Rumberger &	Social and Emotional Health Survey – Secondary (Furlong, You, Renshaw, Smith, & O'Malley, 2014)	One semester Daily sessions 50 minutes per session	School personnel, teachers and psychologists previously trained	Participating in the program has been associated with better school performance, as measured by grades The results did not explain the underlying mechanism of increased school performance: both emotional skills and social support were not statistically significant mediators of school performance and a statistically significant increase in emotional or social skills could not be identified

		USA	school-student connection: recreational excursions, school clubs, weekend activities to prevent drug use - collaboration with students' family: positive feedback from school regarding student's progress	Rotermund, 2012)				
Di Fabio & Kenny (2011)	Developing the emotional intelligence abilities of high school students	Quasi-experimental Experimental and control group Randomized distribution Universal program Final high school year students' Delivered in classrooms Italy	Each intervention session focused on one of the EI branches, as it follows: - Session I – Perceiving emotions: improving the ability to perceive one self's emotions and others emotions, as well as identifying emotions in stories, art, music, etc. - - Session II – Facilitating thought: developing the ability to generate and use emotions as to assist thinking - - Session III - Understanding emotions: developing the ability to understand emotional information and the way emotions combine - - Session IV – Managing emotions: promoting the acceptance of emotional states and developing emotional management skills to support personal development	The ability-based model of EI (Mayer & Salovey, 1997)	MSCEIT (Mayer, Salovey & Caruso, 2002)	4 sessions 2 and a half hours per session per week	N/A	Students participating in the program recorded increased in emotional intelligence scores, both performance-based measured and self-reported Lower levels of perceived indecision and fewer career decision-making difficulties were reported by participants
Garaigordobil & Peña-Sarrionandia (2015)	Developing emotional intelligence in adolescence	Quasi-experimental Experimental and control group Randomized distribution Follow-up Universal program Public and private school students', 13 to 16 years old Delivered in classrooms Spain	The program consisted of 31 activities, grouped into 5 modules (Garaigordobil & Peña-Sarrionandia, 2015, p.5): 1. "Self-awareness" 2. "Emotion regulation" 3. "General status" 4. "Communication" 5. "Empathy"	The ability-based model of EI (Mayer & Salovey, 1997)	Trait Meta-Mood Scale, tradusă și adaptată în limba spaniolă (Fernández-Berrocá, Extremera & Ramos, 2004).	An entire school year 20 sessions One hour session per week	Researcher in psychology (according to the authors, teachers, psychologists or psycho-pedagogues are also eligible)	Students' level of emotional intelligence increased The program positively contributed to the development of students' conflict resolution strategies Similar effects were found in males and females, except for the "emotional clarity" and "assertive social interaction" variables - for these variables, there was a stronger effect of the program for male participants Participants' ability to analyze the causes and consequences of negative emotions increased Follow-up measurements have shown that the positive effects of the program maintained over time
Cramer & Castro-Olivo	Developing socio-emotional skills and	Quasi-experimental Experimental group	Although the program relied on a socio-emotional learning curriculum, it has	Socio-emotional	The Behavioral	6 weeks 12 sessions	Previously trained personnel to	Following participation, higher levels of students' socio-emotional skills and

(2016)	improving resilience, as well as addressing internalization problems	(pre-post test design) Follow-up Program targeting culturally and linguistically diverse school population 9 th and 10 th grade students Delivered in classrooms USA	been adapted to the characteristics of the target group (language adaptation, consideration of the cultural needs of the group, use of cultural experiences to increase the students' adherence to the program, etc.). The program encompassed activities such as, emotional strength training, understanding emotions, facing anger, understanding other's emotions, positive thinking, problem solving, stress release, goal setting, etc.	learning	and Emotional Rating Scale-Second Edition, Youth Rating Scale (Epstein, 2004)	35 to 50 minutes per session	deliver the program	students' resilience were identified Results maintained over time (follow-up) The intervention had an insignificant effect on the internalization problems
Merrell, Juskelis, Tran & Buchanan (2008) Studiul II	Preventing negative developmental and educational outcomes and promoting positive development of adolescents Promoting health and learning and preventing problematic behaviors	Quasi-experimental Experimental group (pre-post test design) Universal program Public school students 7 th and 8 th grade students Delivered in classrooms USA	A curriculum based intervention Content structure: - pre-testing - developing emotional vocabulary / identifying effective ways to express emotions - cognitive-behavioral training for anger management - training empathy - identifying and changing cognitive errors - training optimism - developing problem-solving skills - cognitive-behavioral techniques to reduce stress - behavioral education, connecting emotion and behavior	Socio-emotional learning	Strong Kids Pretest/ Posttest (Merrell, Carrizales, Feuerbom, Guedner, & Tran, 2007)	12 weeks A 50 minutes session per week	Teachers, previously trained by the curriculum developers	Increased socio-emotional knowledge, more effective coping strategies decreased negative socio-emotional symptoms were found across participants
Wigelsworth, Humphrey & Lendrum (2013)	Promoting mental health Developing social and emotional skills related to learning, adaptive behavior and well-being	Quasi-experimental Experimental and control group Universal program Public school students enrolled in the 1 st year of secondary schools (11-12 years old) Delivered in classrooms England	The activities of the program were based on four fundamental dimensions: - holistic approach: partnering with students' parents, promoting positive school culture and making students' voice heard in the community - direct and explicit teaching of social and emotional abilities - implementing a teaching strategy that promotes a secure learning environment - training the teaching personnel on the implementation of the program	Emotional intelligence theory (Goleman, 1996)	The Strengths and Difficulties Questionnaire (Goodman, 1997)	2 school years	Teachers, previously trained	There were no statistically significant effects of the program on emotional symptoms and behavioral problems Students' emotional symptoms were not associated to the implementation quality characteristics

Qualter, Whiteley, Hutchinson & Pope (2007)	Developing emotional intelligence and facilitating school transition	Quasi-experimental Experimental and control group Universal program Public school students (11-12 years old) Delivered in classrooms England	The program was based on two main dimensions: 1. Training delivered by the local authorities in collaboration with a team of academics preparing 10 th grade students to become mentors of the 7 th grade peer students 2. Material support: -a booklet on socio-emotional skills, for 7 th graders - materials for mentors: "cool cards" - a game which involves discussing hypothetical emotional scenarios	Mixed model of EI (Bar-On & Parker, 2000)	Bar-On EQ-i:YV (Bar-On & Parker, 2000)	An entire school year	10 th grade students were mentors of 7 th grade students Previously, the mentors participated in a training	The program had limited effects on developing the level of emotional intelligence and self-learning The program had positive influences on the school transition process of the 7 th graders Participants in the program who recorded an initial low level of emotional intelligence, displayed significantly higher levels of emotional intelligence post-participation (the effect was insignificant for students' with higher levels of emotional abilities at baseline) School competence and social skills of the participating students were significantly higher than those of the control group
Ruiz-Aranda et al. (2012)	Preventing aggressive behaviors and negative psychosocial adjustment outcomes Promoting mental health through coordinated and structured activities	Quasi-experimental Experimental and control group Follow-up Universal program Public school students (12-17 years old) Delivered in classrooms Spain	The content of the program was based on the four branches of emotional intelligence (Mayer & Salovey, 1997). Examples of subordinate activities: - perceiving emotions: learning the physical characteristics of emotions, emotion identification exercises - facilitating thought: identifying ways to use emotions as to positively influence school performance, discussing real emotional situations, identifying solutions for hypothetical emotional scenarios - understanding emotions: enriching the emotional vocabulary through modern games, analyzing the influence of thoughts on emotions - managing emotions: discussing management strategies of emotional states, exercising and developing the ability to stay calm in conflict situations	The ability-based model of EI (Mayer & Salovey, 1997)	Behavioral Assessment System for Children (Reynolds & Kamphaus, 1992) Positive and Negative Affect Schedule (Watson, Clark & Tellegen, 1988)	2 years 6 months per year 24 one hour sessions A weekly session 2 ani	Previously trained psychologists	The program had a positive effect on adolescent mental health Students recorded lower scores of: negative affect, anxiety, social distress, depression and somatization The results maintained over time (follow-up)

Ruiz-Aranda, Salguero, Cabello, Palomera, & Berrocal (2012)	Improving the psychosocial adaptation of adolescents by developing emotional intelligence skills	Quasi-experimental Experimental and control group Randomized distribution Universal program Public school students (13-16 years old) Delivered in classrooms Spain	The structure and the content of the program are not described in this study (details in Ruiz-Aranda, Fernández-Berrocal, Cabello & Salguero, 2008)	The ability-based model of EI (Mayer & Salovey, 1997)	Behavioral Assessment System for Children (BASC) (Reynolds & Kamphaus, 1992)	10 weekly sessions One hour per session	Previously trained staff	Participating students' achieved better results for the measured variables of psychosocial adaptation: lower levels of anxiety, less symptoms of somatization and social stress, and a higher level of self-esteem, compared to the control group No program effects were found on students' self-confidence or on the relationship with their parents
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*Note.** CASEL (2005) is an evidence-based practical and theoretical guide for developing, implementing and evaluating socio-emotional learning programs.

The majority of the studies included in this analysis indicated positive multidimensional effects of emotional intelligence interventions such as: improved social and emotional skills (Di Fabio & Kenny, 2011; Garaigordobil & Peña-Sarrionandia, 2015), higher school performance (Brackett, Rivers, Reyes & Salovey, 2012, Dougherty & Sharkey, 2017) and increased psychosocial adaptation (Ruiz-Aranda et al., 2012; Ruiz-Aranda, Salguero, Cabello, Palomera, & Berrocal, 2012) (see Table 1). One study failed to identify significant effects of the intervention program on emotional symptoms and behavioral problems (Wigelsworth, Humphrey & Lendrum, 2013).

Although the intervention programs presented in the analyzed studies focused on developing emotional abilities, solely or taken together with other abilities, in some of the studies we have not been able to identify the specific instruments with which the emotional abilities have been measured. Furthermore, it has been noticed a tendency of using emotional abilities measures solely in evaluation studies of interventions explicitly aiming to develop emotional abilities, as a final outcome. This type of approach might represent a methodological limitation of the studies. The use of pre/post-intervention emotional abilities measures may provide essential data regarding the underlying mechanism of change in some psychosocial outcomes. Outcomes measures, such as: Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, Salovey & Caruso, 2002), Bar-On Emotional Quotient-inventory: YV Assessment System for Children (Reynolds & Kamphaus, 1992) were used in the reviewed studies. One methodological difficulty identified in some of the reviewed studies resides in the apparent lack of correspondence between the stated purpose of the programs, the targeted outcomes and the measures used to evaluate the effects of the intervention. More specifically, several studies explicitly aimed to develop emotional abilities (among other dimensions), but we failed to identify post-intervention measures of such abilities (Garaigordobil & Peña-Sarrionandia, 2015).

3.5.4. Discussion, conclusions and limits

The present study reviewed the empirical literature on intervention programs aiming to develop the emotional abilities of adolescent students. Although some methodological difficulties have been identified in the reviewed studies, emotional abilities have been found (almost unanimously) as having direct and indirect effects on a variety of positive developmental and educational outcomes. The results obtained in this analysis can be viewed as one of the preliminary steps taken towards developing intervention guidelines for improving emotional intelligence abilities of the Romanian students. The analysis has facilitated the identification of several effective intervention strategies and techniques for developing emotional abilities and promoting the positive associated outcomes within schools. The results obtained in this analysis suggest that implementing such programs may have positive general effects on the psychosocial development and school performance of the adolescent students.

Furthermore, based on the results, some methodological recommendation for future evaluation studies of programs targeting to develop emotional abilities of Romanian adolescent students were drawn. However, one of the limits of this study is represented by the limited access to free scientific databases. Hence, there may be studies relevant to the topic and criteria of this analysis but which have been omitted due to access related issues.

3.6. Guidelines and recommendations for developing an emotional intelligence training program for high school students

3.6.1. Introduction

School has been described as one of the most appropriate contexts for developing the emotional intelligence abilities of an individual (Mayer & Salovey, 1997). The term

“intervention” refers to the use of techniques, strategies, materials and instructions, usually on short-term or medium-term, aiming to increase the performance of selected students in one or several functioning or performance domains (Houssart & Croucher, 2013).

This study aims to elaborate the initial phases of an intervention program targeting to develop the emotional abilities of high school students in Romania by formulating preliminary recommendations on the structure and content of the program, taking into account the identified students’ needs and the socio-cultural and educational particularities within Romania. The recommendations outlined in the study will be empirically based on the corroboration of the results obtained in the 4th and the 5th study of this doctoral research. Furthermore, the guidelines presented in this study will be theoretically driven by the Compensatory model of resilience (Fergus & Zimmerman, 2005) and the Ability-based emotional intelligence model (Mayer & Salovey, 1997).

3.6.2. Methodology

In order to design the initial phases of an intervention program targeting to develop emotional intelligence abilities of high school students, the procedural steps described by Zeidner were followed (details in Zeidner, 2017 and Zeidner, Roberts & Matthews, 2002): prospecting, design and implementation, evaluation.

3.6.3. Results

The following preliminary suggestion were formulated, regarding the design, implementation and evaluation of an emotional intelligence development program, for the Romanian high school students:

Prospecting stage

Founding interventions on scientifically robust theoretical models. According to the Compensatory model of resilience (Fergus & Zimmerman, 2005), although risk and protective factors may act simultaneously upon an individual, promotive factors can alter the negative effects of risk factors and the associated outcomes.

Based on the results obtained in the 4th study of this doctoral research, risk-taking behavior, such as reckless behavior, might be a risk factor of school performance related outcomes (see Chapter 3.4, Results section). Also, in the 4th study, strategic emotional intelligence has been found as a significant positive predictor of school performance. Therefore, from a compensatory model perspective, strategic emotional intelligence may act as a promotive factor of positive school performance outcomes.

The second theoretical model used in designing the intervention program is the Ability-based emotional intelligence model (Mayer & Salovey, 1997). According to the authors, emotional intelligence skills’ development is initiated within family, and schools are favorable environments for further developing and enhancing these abilities (Mayer & Salovey, 1997). In previous research, emotional intelligence has been positively associated with a wide range of educational, social and behavioral outcomes (Mayer, Salovey, Caruso, 2004).

Evaluating students’ needs. The 4th study of the doctoral research facilitated the identification of the psychosocial and educational characteristics of the population, essential for scaling the intervention program. The results of the 4th study revealed that students scored lower on strategic emotional intelligence tasks. Moreover, strategic EI and its subordinate branches were found as significant predictors of school performance. Therefore, based on these results, it has been decided to design and deliver the intervention as it follows: (1) Phase I, or the initial stage of the program implementation, which will ensure a minimum level of emotional abilities across all participating students. In this phase of the program, specific activities will be carried out to enhance lower complexity emotional abilities (*i.e.* the abilities subordinated to perceiving

emotions and using emotions to facilitate thought); (2) Phase II, the main focus of the intervention, will be centered on the development of complex emotional abilities (subordinate abilities of understanding emotions and managing emotions), highlighted by the 4th study as being related to school performance.

Identifying available resources. The results obtained in the 4th study suggested that the teacher is an important resource of high school student's social support network. Therefore, the direct involvement of teachers in the implementation of the program may have positive effects on student's adherence to intervention. Regarding the availability of the schools to participate in the program, it will be necessary to establish discussion meetings with the school board in which the program with its objectives and potential benefits will be presented.

Design and implementation stage

The intervention program will be integrated in the school curriculum (as recommended by Mayer & Salovey, 1997) as an optional integrated discipline, with new specific competences and content that transcends more disciplines or curricular areas. As the results of the 4th study suggested that the relationship between emotional abilities and school performance is invariant by (a) gender, (b) indicators of socio-economic status and (c) high school, the program will be universal, targeting students from 11th and 12th grades.

Defining goals and objectives. The purpose of the intervention program is to develop students' emotional intelligence abilities in school settings. Thus, the following objectives were formulated:

- O1. Enhancing experiential EI abilities (*i.e.* perceiving emotions, facilitating thought through the use of emotions) of the Romanian high school students.
- O2. Developing the strategic EI abilities (*i.e.* understanding emotions and managing emotions) of high school students.
- O3. Enhancing students' school performance by developing emotional abilities.
- O4. Promoting a general positive affective environment within educational institutions.

Setting up the implementation team. The implementation team will reunite: (a) school administrators, who will have an important role in monitoring the implementation of the program and maintaining the collaboration between the program developers and the participating school personnel and (b) school psychologists, school counselors and teaching personnel, based on their availability and willingness to participate. Prior to implementation, the participating personnel will be trained via dedicated workshops based on topics such as: psychosocial and school performance characteristics of the Romanian high school students, identified in the 4th study, (b) particularities of the Ability-based emotional intelligence model, (c) research results on the EI training effects (d) strategies and techniques for improving adolescents' emotional abilities, (e) structure and content of the EI development program addressing the Romanian high school students, (f) implementation recommendations, etc.

Program content. Based on the Ability model of emotional intelligence, developed and updated by Mayer, Caruso & Salovey (2016), a series of specific activities targeting to improve students' emotional abilities was developed. The content of the program combines theoretical and practical activities and delivers formal and non-formal learning experiences. Recommendations for emotional abilities development activities are presented in Table 1. Also, some of the actions outlined in the table will be accompanied by community-based activities, through which will be created exercising and generalizing opportunities. Such activities can be represented by thematic excursions or fundraising activities for particular issues, identified in the community at the time of implementation. Furthermore, parents will be invited to participate in the community-based activities, in order to strengthen the school-family collaboration.

Table 1

Recommended activities for developing emotional intelligence abilities (emotional abilities were described Mayer, Caruso & Salovey, 2016, p. 294)

EI Area	EI Branch	Emotional abilities/ Specific objectives	Activities	Methods and materials
Experiential EI	Perceiving emotions	“Identify emotions in one’s own physical states, feelings, and thoughts”	"Emotional Vocabulary" - Exercises for Developing emotional vocabulary *	Introductory oral presentation: emotions and their role Discussion on basic emotions
		“Perceive emotions in other people through their vocal cues, facial expression, language, and behavior”	"Emotions through the magnifying glass" – Examining the facial, language, body language cues of different emotions **	Front oral presentation Dividing working groups and building illustrative collages of different emotions Analyzing video sequences and naming the emotions displayed by the characters
		“Perceive emotional content in the environment, visual arts, and music”	"Emotions Detectives" – Identifying emotions in art objects, music, landscapes, etc. **	Discussing the emotions displayed in video sequences, images and stories
		“Express emotions accurately when desired”	"What do I feel?" – Identifying emotions generated in certain contextual situations **	Situational dialogues in which various emotional triggers occur
		“Discriminate accurate vs. inaccurate emotional expressions” “Understand how emotions are displayed depending on context and culture” “Identify deceptive or dishonest emotional expressions”	"Emotion in Context" - Identifying adaptive /maladaptive emotions, depending on the contextual characteristics ** "Diversity of emotions" - Identifying the characteristics of expression of emotions in different specific situations and cultures ** "Emotion: True or False" -Exercises to differentiate authentic-dishonest (disguised) emotions **	Sequential analysis of video which illustrates the triggering and expression of emotions Discussing emotional scenarios from fiction literature Workgroup activities: creating scenarios in which emotion is maladaptive and identifying adaptive alternatives Presenting different ways of expressing emotions, culturally-dependent (videos) Building scenarios and analyzing how emotion is expressed Changing the scenario so as to generate another type of emotion Dialogues based on video sequences or images in which authentic dissimulated emotional expressions are illustrated Brainstorming on authentic emotion indicators

“Generate emotions as an aid to judgment and memory”	"Thinking and Feeling" -Exercises to identify thoughts associated with certain emotional states *	Analyzing TV ads and identifying emotional triggers
	"On the trail of emotion" - Guided imagery exercises for inducing emotions *	Discussing the impact of emotions conveyed by TV commercials affect thinking
		Creating a TV ad and discussing how it impacts consumer's emotions product-related thoughts
		Discussing methods of voluntarily generating an emotion, such as remembering moments saturated with the desired emotion
“Prioritize thinking by directing attention according to present feeling”	"Emotional Thinking" - Identifying the relationship between emotions and thoughts in real-life scenarios***	Discussing the association between emotions and thinking (e.g. a negative emotional state is associated with low creativity)
		Imagery exercises: "What are my thoughts when I feel sad? Do I have different thoughts when I feel angry? "
		Discussing real-life situations in which emotions influenced the way students' approached a challenging situation
		Discuss the emotional states of story characters
“Generate emotions as a means to relate to experiences of another person”	"Step into my shoes" – Perspective-taking exercises. Introducing the concept of empathy ***	Role-play in which students adopt the colleague's emotional perspective
		Identifying emotional states in literature characters and the subsequent actions
		Identifying alternate action scenarios of story characters if they would've felt a different emotion
“Leverage mood swings to generate different cognitive perspectives”	"Time-out" -Emotion re-evaluation exercises ***	Discussing challenges faced by students (inside or outside the school environment) and the associated emotions
“Select problems based on how one's ongoing emotional state might facilitate cognition”	"Emotions and Problems" - Identifying the emotions triggered by different challenging situations*	Brainstorming to identify ways of prioritizing and addressing students' real-life problems
	"Emotions at work" - Problem solving exercises *	Using stories or movies which illustrate how an emotion can convert into another one (eg. from anger to disgust)
		Dividing students' in work groups and building scenarios in which an emotion blends into another
		Using art objects to identify conveyed mixed emotions
		Observing emotions that appear simultaneously in real-life scenarios
“Label emotions and recognize relations among them ”	"Emotional Carousel" – Identifying emotional transitions in different specific situations ***	Using movies to identify emotions that occur simultaneously
“Recognize likely transitions among emotions”	"Mixed feelings" – Identifying emotions felt simultaneously ***	Guided imagery: Teacher-built scenario in
“Understand complex and mixed emotions”		

Managing emotions

<p>“Determine the antecedents, meanings, and consequences of emotions”</p>	<p>"The Life of an Emotion" - Sequential analysis of an emotion from trigger to behavioral display***</p>	<p>which emotions are successively converted and combined, depending on the triggers</p>
<p>“Appraise the situations that are likely to elicit emotions” “Understand how a person might feel in the future or under certain conditions” “Recognize cultural differences in the evaluation of emotions”</p>	<p>"Discover the spark" - Exercises to identify the emotional triggers * "Emotional prognosis" – Anticipating the emotions which a person may experience in certain situations * "Emotion and Culture" - Exercises for evaluating emotions in different cultures ** Mentoring activities (see the 5th study for details): The beneficiaries of the program are mentors for 10th grade students</p>	<p>Introducing the emotional ABC (antecedents-meanings-consequences) Analyzing movie sequences and story scenes; pausing and discussing the antecedents, the generated emotions and the consequences Analyzing current real-life national or international events and identifying the emotional triggers, as well as the associated thoughts and behaviors of the community Preparing collages in work groups which trigger a certain emotion Mentoring activities: Meetings between mentors and students 10th grade students</p>
<p>“Stay open to pleasant and unpleasant feelings, as needed, and to the information they convey”</p>	<p>"I live, so I feel" - Analyzing emotions felt in various situations and the associated meaning **</p>	<p>Discussing real-life situations in which students felt pleasant and unpleasant emotions Generating personal “mantras” which can be repeated in challenging situations which trigger unpleasant emotions Discussing the meaning conveyed by unpleasant emotions, such as perceiving a threat to students’ personal goals</p>
<p>“Monitor emotional reactions to determine their reasonableness” “Engage with emotions if they are helpful; disengage if not”</p>	<p>"Observatory of emotions" - Exercises for observing emotions triggered in certain situations and testing their adequacy * "Stop-Frame" - Exercises to analyze the contextual utility of an emotion ***</p>	<p>Identifying examples of managing emotions from students’ personal experience Analyzing video content in which emotions are displayed and debating the usefulness of the emotion in that particular setting Discussing the usefulness of emotions encountered by students’ in certain challenging situations</p>
<p>“Evaluate strategies to maintain, reduce, or intensify an emotional response” “Effectively manage one’s own emotions to achieve a desired outcome” “Effectively manage others’ emotions to achieve a desired outcome”</p>	<p>"Emotions’ Director" - Exercises to identify emotional management techniques * "I can manage my emotions effectively" - Exercises to identify effective emotion management methods, based on the personal experience of the students ** "I Want to Help You" - How to manage others’ emotions *** Mentoring activities (see the 5th study for details) - The participants in the program are mentors for 10th grade students</p>	<p>Identifying emotional management techniques in students’ past experience and generating, together with students, a set of emotional management strategies, based on their (e.g. the Emotional Management Decalogue) Dividing students in work groups and creating posters on effective methods of managing a specific emotion (e.g. a group will have to create a poster on managing "surprise", other group will work on "sadness", etc.)</p>



Role-play: building emotional scenarios and applying management techniques
School play: Selected students' working together with teachers are writing a short drama play script about emotions which will be further played by the students'
Students' families will be invited in the audience

Note. Recommendations were formulated based on the available literature, as it follows: * Brackett & Katulak (2006), ** Mayer, Caruso & Salovey (2016), *** Mayer & Salovey (1997).

Evaluation stage

Structured observations on students' program compliance and personnel's reports on barriers encountered in the implementation stage, as well as receiving feedback from participating students' will draw attention on the implementation features which require improvement and will further facilitate adjusting the program in real time. The post-implementation assessment will reveal critical data on the effects of the program which can be used to refine the program for future participants.

Regarding the methodology for evaluating the effectiveness of intervention programs, it is recommended to use pre-post intervention measures as well as experimental and control groups (see the 5th study). Moreover, tracking the long-term effects of the intervention may provide useful quality-related data. Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, Salovey, Caruso, Iliescu, & Livinti, 2011), will be used to measure the emotional intelligence abilities, while grades' averages taken together with standardized test results will be used as indicators of school performance.

3.6.4. Discussion, conclusions and limits

This study presents the initial stages of an emotional intelligence training program aiming to develop students' emotional abilities in school settings, as well as to promote students' school performance. From a practical point of view, this study describes intervention guidelines and recommendations which may have educational and preventive effects (e.g. school abandonment and risk behavior engagement). From a theoretical perspective, this study presents a conceptual model of intervention (developed by Zeidner, 2017 recommendations), adapted to the needs and characteristics of the Romanian school population. The approach presented in this study may have multiple benefits. First, the results of the 4th study suggested the need for intervention to develop students' emotional abilities. Therefore, the implementation of the intervention program may increase the level of emotional abilities of the students', which, in turn, are associated with a variety of positive psychosocial and educational outcomes (Di Fabio & Kenny, 2012; Rivers et al., 2013). Secondly, previous research suggested that adolescence is a fragile developmental stage in terms of undesirable outcomes occurrence in various domains, such as education or behavior (Irwin, 1993; Moore & Gullone, 1996; Andrei, Profiroiu, Iacob & Ileanu, 2011). Increasing the emotional abilities of adolescents may act as a compensatory factor, promoting positive educational outcomes and altering the negative effects of risk factors. Last but not least, this study is one of the initial attempts for developing emotional abilities in upper secondary education students', in Romania. Hence, the results of this study may have a positive impact on raising awareness on emotional abilities' role during adolescence and the need to integrate them in the educational environment.

Nevertheless, this study has some limits. The emotional learning activities proposed in this study (Table 1) were based on the results of the international literature analysis. Even though some of these specific activities have proven to be effective in international intervention programs, they may not be the most appropriate in another cultural context, such as Romanian high schools. From this point of view, pre-testing the program will allow drawing suggestions on further revising the intervention.

CHAPTER 4. DISCUSSION. GENERAL CONCLUSIONS

The purpose of this doctoral research project was to elaborate scientific suggestions for developing an intervention program based on specific factors identified as having positive effects on Romanian students' school performance.

The theoretical framework of the doctoral research project integrated elements and theories from educational psychology, developmental and social psychology (Irwin, Igra, Eyre & Millstein, 1997, Irwin, Igra, Eyre & Millstein 1997; Zimmerman 2000; Vygotsky, 1978). The relationship between the selected psychosocial factors and school performance has been investigated by testing predictive models theoretically driven by the Compensatory model of resilience in adolescence (Fergus & Zimmerman, 2005).

The relationship between the psychosocial factors (and their subordinate dimensions) with school performance was sequentially investigated according to the specific objectives delineated in each study of the project, thus contributing to the expansion of the empirical knowledge on the psychosocial associates of high school performance.

4.1. Theoretical implications

The first study consisted in a systematic analysis of the research on the relationship between emotional intelligence (EI) and students' school performance. The analysis facilitated summarizing empirical data on the relationship between the two variables, identifying the theoretical models of emotional intelligence used in research and highlighting some methodological practices, extensively used in the international studies. The results were further used in designing the methodology of the studies conducted in the present doctoral research.

The second and the third studies aimed to translate and linguistically validate on Romanian students two internationally developed scales: Children and Adolescent Social Support Scale - CASSS (2000), and Adolescent Risk-taking Questionnaire-Behavior Scale - ARQ-b (Gullone, Moore, Moss & Boyd, 2000). The results have theoretical and practical implications. Specifically, within this doctoral research, the Romanian translated CASSS (Malecki, Demaray & Elliott, 2000) facilitated the data collection on perceived social support which was further used to investigate social support's connections to other psychosocial characteristics and school performance. The results of the statistical analysis suggested that the translated scale has good psychometric characteristics and is an appropriate measure of social support perceptions in adolescence. Similarly, ARQ-b translation and linguistic validation study (Gullone, Moore, Moss & Boyd, 2000) has supported the provision of a risk-taking measure, linguistically adequate for the Romanian high school students. The results of the statistical analysis suggested good psychometric properties of the scale. However, the results of the psychometric analysis carried out in the fourth study revealed certain validity issues on some subscales (discussion available in the fourth study). Therefore, the interpretation of the subscales scores should be done with caution.

As far as we are concerned, at the time the present doctoral research was conducted, the **fourth study** was one of the initial attempts to investigate the psychosocial predictors (of interest for the present work) of high school performance. The results highlighted that the strategic emotional intelligence, with its subordinate branches (*i.e.* understanding emotions and managing emotions), is a strong positive predictor of school performance. At the same time, individual negative predictors of school performance have been highlighted, such as total risk behavior, reckless and rebellious behavior. Thus, from a resilience perspective (Fergus & Zimmerman, 2005), the results of fourth study suggested that specific emotional intelligence abilities can act as compensatory factors of school performance, whilst risk-taking behaviors represent a risk factor for lower school performance. Furthermore, based on the results of the moderation analysis it was concluded (at theoretical level) that an intervention program targeting to develop the emotional abilities associated with school performance in adolescence may have similar effects for male and female high school students', with different socioeconomic backgrounds. Last but not least, investigating the relationship between emotional intelligence abilities and psychosocial factors allowed gathering new data on the effects of emotional abilities in adolescence, contributing to the expansion of the literature. Thus, the more complex abilities of

the strategic area of emotional intelligence were mainly identified as predictors of risk-taking behaviors, while lower complexity emotional abilities, subordinated to the experiential area, were found as general self-efficacy and social support predictors.

The fifth study consisted in a systematic analysis of the evaluation studies of programs targeting to develop adolescents' emotional abilities in school settings. Thus, essential aspects of the design, implementation and evaluation of intervention programs were identified. Considering the multiple benefits of the revised programs, the results can be interpreted as an indicator of the necessity to initiate such programs for the Romanian students. From a theoretical point of view, the conclusions drawn in this study may be further considered in designing intervention programs for the Romanian adolescent students.

The sixth study consisted in designing the initial stages of an intervention program developing high school students' emotional abilities in school settings, in Romania. In this study, preliminary recommendations were elaborated regarding the structure and content of the program, taking into account the needs of the school population identified by empirical study (4th study) and the characteristics of the socio-cultural and educational context in Romania. From a theoretical perspective, the recommendations were developed based on the Compensatory model of resilience (Fergus & Zimmerman, 2005) and the Ability-based emotional intelligence model (Mayer & Salovey, 1997). The program's stages were determined by Zeidner's (2017) recommendations. The results of the sixth study highlighted essential features of the intervention program, such as: structure and content of the program, resources needed for implementation and evaluation, etc., these aspects having an essential role in terms of impact on the quality of the intervention program and the implementation effects (Zeidner, 2017).

4.2. Practical implications

In varying proportions, all six individual studies included in this doctoral research project contributed sequentially to obtaining the necessary data for designing an intervention that may have a positive effect on school performance in upper secondary education in Romania.

Overall, the results of the first study outlined specific emotional intelligence abilities related to school performance, in international studies and suggested intervention areas.

Through the second and third study, we provided translated and validated measures of social support and risk-taking behavior in adolescence which can be further used in practice to investigate the link between risk-taking behavior and other psychosocial and educational outcomes.

The results obtained in the fourth may have practical utility in the context of designing interventions to promote school performance in Romanian high schools.

The fifth study has made it possible to identify key features of intervention programs for developing emotional skills school settings. Furthermore, the results facilitated drawing some methodological recommendations which may be considered in future evaluation studies of intervention programs.

Last but not least, the results obtained in the sixth may have immediate practical utility in terms of pre-testing the program. The implementation may have primary positive effects on students' performance and secondary effects on psychosocial developmental outcomes.

4.3. General conclusions of the doctoral research

a) A series of international studies have shown positive relationships between emotional intelligence dimensions and adolescents' school performance. Most of the international studies analyzed have used the overall grades' average as an indicator of school performance. In terms of emotional intelligence, a diversity of theoretical models and measures has been noted.

b) Following the translation and the linguistic validation of CASSS (Malecki, Demaray & Elliott, 2000), we obtained a psychometrically sound social support measure, linguistically adequate for the Romanian adolescents.

c) The overall score of the Romanian version of ARQ-b (Gullone, Moore, Moss & Boyd, 2000) indicates a psychometrically appropriate measure of risk behavior engagement in adolescence.

d) Specific dimensions of emotional intelligence, such as strategic emotional intelligence and its subordinate branches were significant predictors of school performance in adolescence, while risk-taking behaviors had negative predictive effect on school performance. Moreover, the strategic area of emotional intelligence has been highlighted as a predictor risk behavior engagement, while the experiential area predicted self-efficacy and social support dimensions.

e) There is a variety of programs designed to develop the emotional abilities of adolescents in school settings. Emotional intelligence abilities are characterized by plasticity, and they can be developed and improved in adolescence through specific interventions. Most intervention programs had a positive effect on school performance, behavioral and psychosocial outcomes.

f) Designing the initial phases of an intervention program targeting to develop the emotional abilities of the Romanian high school students was based on the available theoretical models and on the empirical results obtained in the previous studies of the doctoral research. Thus, a series of recommendations concerning the intervention timeline (*i.e.* prospecting, design, implementation, and evaluation), the structure (*i.e.* objectives, resources involved, and activities) and the evaluation methodology (e.g. measures) were drawn.

4.4. Research limits and future research directions

This doctoral research had some limitations. First of all, all the data was collected in Cluj-Napoca (Cluj County), hence we are aware that the results have low generalization power. In order to increase the generalization power of the results, future research may consider collecting data from several regions of the country. Also, for the measurement of school performance, a single indicator, represented by the grades' averages, was used. Other studies used combined measures of school performance (eg, Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006). This methodological approach might decrease the risk of biased results.

Furthermore, although in the preliminary linguistic validation analysis of the ARQ-b (Gullone, Moore, Moss & Boyd, 2000), conducted in the third study, the results suggested psychometric good psychometric properties of the scale, the results obtained in the fourth study revealed divergent validity issues of particular subscales. Hence, future studies may address the psychometric properties of the translated ARQ-b (Gullone, Moore, Moss & Boyd, 2000).

However, the results obtained in this research may contribute to the expansion of knowledge on factors associated with school performance in adolescence provide practical suggestions to promote students' school performance. Last, but not least, the results obtained in this doctoral research, in general and in the sixth study, in particular, may promote higher school performance and better psychosocial adjustment of the students' (in terms of implementing the outlined intervention) and may further support school institutions in maintaining performance standards and stimulating school completion.

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