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Academic Success, Emotional Intelligence, Well-Being and Resilience of First-Year Forestry Students

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Abstract: Academic success is conceptualized as a multifactor model, achievement and persistence after the first year of study being considered the main learning outcomes. In this area, the findings are inconsistent, depending on the academic context, individual characteristics and diversity of psychological measures. Here, we conducted two related correlational studies to analyze variables of the emotional domain, as emotional intelligence (2017–2019), emotions, well-being and resilience (2018–2020), dropout intention, perceived barriers to completion at the beginning of first years of study in forestry, academic performance and real dropout at the end of the first year of study and several socio-demographic variables. The two studies focused on undergraduate students and included 367 and 227 participants, respectively. Forestry students with higher academic performance report higher accomplishment and engagement and feel weak negative emotions concerning aversive academic assessment compared with students with lower academic performance and students that abandoned their studies. Female students and students with full ECTS load at the end of the first year use their emotions more effectively, have reported lower dropout intention and lower perception of barriers to completion of study, and have higher GPA admission and expected GPA. Performance at the end of the first year is explained by GPA admission, relationships with high school teachers, expected GPA, gender, and academic resilience. Dropout intention is explained by barriers to completion of studies, general negative emotions and negative affect related to threatened assessment situations, and managing others' emotions. Our findings may help develop intervention measures at the individual and organizational level.

Keywords: forestry students; academic success; emotions; barriers to completion; well-being; gender



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1. Introduction

To understand academic success, multifactor conceptualizations are used [1], a single-factor approach being considered not sufficient [2]. A review of academic success offers a conceptual model that includes achievement measured by grades of courses or students' grade point average (GPA), persistence after the first and second years, acquisition of skills and competencies, attainment of learning objectives, satisfaction, and career success as post-college performance [3]. Other studies consider three main dimensions of first-year student success to be students' academic achievement, social-emotional well-being, which are both related to factors within the student, and critical thinking skills, which are related to learning factors [4]. Systematic reviews show that students, especially in the first year, feel challenged by the workload of the study program, by the difficulties with efficient exam preparation [5], or separation from parents and friends [6].

Student attrition is a result of a complex process of interaction between students' personal attributes, the characteristics of their academic institutions and the significant impact of student-college fit on students' intention to persist [7]. Personal factors, related

to self-management and adjustment to student life, and organizational requirements are involved in persistence and academic achievement [5].

The OECD reports an average of graduation rate at Bachelor's or equivalent level of 36.9% for women and 24.1% for men. In Engineering Sciences, this rate was between 7.2% and 23.1% for member countries [8]. The importance of our study is related to this low average of graduation in tertiary education. In 2019, 11.5% of the students in agriculture, forestry, fishery and veterinary medicine were not able to pass the study year in Romania [9]. Additionally, first-year academic performance emerges as the best predictor of 2nd- and 3rd-year persistence [10].

The study relevance is a consequence of using more variables of interest less used in empirical research, including barriers to completion of study. This concept is similar to the cost of studying, operationalized as consequences of tasks, effort, psychological cost, or opportunity cost. We also used the success expectancy from the motivation domain [11] students with low expectancy reporting a stronger increase in dropout intention [12].

1.1. Emotional Intelligence and Emotions

There is a conceptual heterogeneity of emotional intelligence (EI), but the earlier definition includes appraisal, expression and regulation of emotion in the self and others, and utilization of emotions in solving problems [13]. Many studies have found that women score on EI higher than men, particularly for the EI interpersonal scale [13,14], empathy and interpersonal relationships score [15]. EI is approached not only as a predictor of other variables but also as an important outcome, the reciprocal influences being validated [16,17].

The relationship between EI and academic performance is the area of major controversy [18]. On one hand, higher levels of students' emotional intelligence are associated with higher grades at the end of the academic year [13] and the progress to Year 2 of study [19]. Students that persist had significantly higher levels of interpersonal, intrapersonal, adaptability, and stress management compared to those that drop out [20]. Non-completion was associated with low-EI profile, especially in the interpersonal and stress management domains, after controlling for gender and high school grades. Males that dropped out scored significantly lower than all other participants on the interpersonal scale and total EI scale six years after enrollment in university [14]. A recent study showed that emotional intelligence is the third most important predictor of academic performance, after intelligence and conscientiousness [21]. At the end of the academic year, high-achieving students scored significantly higher on EI dimensions compared to underperforming students, although they did not differ on course load or high school GPA [22]. On the other hand, some studies did not find associations or found small and not statistically significant correlations between EI and academic achievement [23] or found this association only in male students [19].

In general, positive emotions are beneficial for learning [24] and predict academic performance through their effects on the quality of the learning process, or the quality of the relationships with teachers and peers [25,26]. Negative academic emotions (e.g., anger, anxiety, shame) predict low achievement and students' withdrawal from university courses. They can negatively influence final performance and test scores (e.g., toward Mathematics) at secondary education [17].

Emotions, in general, have been identified as one of the key factors that influence learning [27]. Anxiety, confusion, and frustration were positively correlated with dropout [28], and they drive a self-deprecating cycle [29]. Sometimes, negative emotions may signal a need for more effort and attention; thus, they have an adaptive effect on the learning process [30]. In addition, empirical studies showed contrasting results concerning negative affect, which do not relate consistently to learning outcomes. To face negative emotions triggered by every day and university life, students use different coping strategies that favor investment or non-investment in their academic goals and, consequently, academic success or failure.

1.2. Well-Being and Resilience

Well-being is defined as self-perception and self-evaluation of own life; individuals who have high psychological well-being are emotionally healthy, happy, resilient and functioning well in daily routine [31]. The psychological well-being includes enjoyment, pleasure or meaning and fulfillment. The subjective well-being refers to an individual's assessment/judgment of their life satisfaction and specific life domains (e.g., academic satisfaction), while the objective well-being refers to the measure from the societal perspective [32]. In this study, well-being is considered in its association with academic success and emotional variables.

The PERMA model of well-being includes positive emotions, engagement, relationships, meaning and accomplishment, which increase flourishing [33]. Several studies highlighted the importance of well-being in shaping active engagement and in obtaining academic outcomes [34] or mentioned engagement having a mediating role between emotions and academic success in a college science course [35,36]. Student disengagement and lower academic aspirations during the first year of study are associated with student attrition [37].

Personal well-being, measured at the beginning of university studies, positively predicted students' academic achievement after three years' study [38]. A meta-analysis that examined the relationship between well-being and academic achievement suggested that high-achieving students do not have high well-being and low-achieving students do not necessarily report low well-being. The results, in a German university, support that well-being reduced dropout intention [39]. A positive significant relationship between EI and well-being, positive mood and higher self-esteem was found [40,41].

Academic resilience contextualizes the resilience as a multidimensional construct, which reflects an increased likelihood of educational success despite adversity, and positively correlates with general academic self-efficacy. Negative emotions in assessment situations include anxiety, catastrophizing, avoiding negative emotional responses, and hopelessness and are conceptualized as a dimension of resilience [42].

Resilience was identified as the single factor that significantly predicts intention to leave, academic success and real dropout, while known predictors of academic outcomes, such as young age, gender, and previous education, were not confirmed as significant predictors for intention to leave, academic success and real dropout [43,44]. Students that persist after their first year of college have more vigor, more endurance, and more ingenuity than those who drop out [45]. Resilience gender-related differences are in female favor but are not significant [42]. Perceived stress of undergraduate students negatively predicts academic performance [46].

1.3. Students' Performance and Relationships with Teachers

The meta-analyses and empirical studies found that past school performance, as high school GPA or standardized score, were important predictors of academic achievement, which was expressed as college graduation or college freshman GPA [47,48]. Similarly, another meta-analysis showed that high school grade point average (GPA) strongly influences persistence toward completing a degree [10]. Moving from high school to a post-secondary institution is a major life event; students need to make new relationships, modify existing relationships with parents and friends and, generally, adjust to a new academic environment [20]. Expected performance, as confidence to academic future and distinguished from efficacy, is related to achievement [11].

A systematic literature review analyzing achievement in higher education highlighted the close relation between current performance and students' characteristics, as high self-efficacy, intelligence, conscientiousness, and high prior achievement, social interaction in courses, instructional methods and learning strategies [49]. Underprepared students are more likely to drop out of college and have lower GPA compared to their more prepared peers [50]. In contrast, other studies showed that academic success in the first year of study was not associated or has only a mild association with graduating high school

GPA [51]. The students' intention to leave or persist is influenced more by psychological outcomes than by academic variables [52]. The use of demographic and academic variables alone did not fully explain the variation in academic success of college students [53], but these variables influence the early dropout intention [54]. SES is a weak predictor of both academic performance and retention [10]. Empirical studies and meta-analyses showed that female students have a tendency to outperform compared to male students [55,56] and have lower dropout rates than their male counterparts [57]. The current tendency in Europe confirms gender-related differences in the population aged 18–24; thus, the lower proportions of early leavers are among young women than young men [58]. Previous findings comparing various fields of study, science, humanities or economics indicated that dropout is subject related [59], and relationships between university achievement and prior achievement (GPA at high school) differ between humanities, commerce and science [21,60].

Students' relationships with teachers are essential in the learning environment. Although their consequences can be detected even at the tertiary level, students–teachers' relationships have been studied more in secondary education. The relationships with teachers, based on students' perception, include closeness, conflict or dependency, expressing as positive emotions, support and instrumental help [61]. Positive teacher–student relationships are related to high achievement, self-esteem, trust, well-being, and school connectedness [62].

Cost might be especially helpful for understanding the barriers for unmotivated students and is separated from other components of the expectancy–value model [63]. The cost of studying [63] or barriers to completion [54] negatively predict academic achievement/final grade, have a positive relationship with dropout intention [63] and positively predict dropout intention for freshmen [54].

We can conclude that EI, positive and negative emotions, resilience, and well-being are variables that might be associated with first-year performance and dropout intention/persistence. An inclusive approach [1] has added to the above explanatory variables of academic success gender, age, parental education level and socioeconomic status, experience of the program, and motivational beliefs, learning strategies and behavioral engagement, as intention to persist versus dropout.

We aimed to explore whether emotional intelligence, emotions, well-being and resilience are related and explain students' academic performance, dropout intention and real dropout in forestry higher education. The reason for our choice is given by the fact that GPA and retention vs. dropout are the most utilized measures of academic success [3]. We examined academic achievement at the end of the first year of study, which was measured by ECTS—retention versus dropout after the first year in relation with variables within emotional and motivational fields. Our research consists of two studies: the first one examines the academic achievement, measured by ECTS and retention versus dropout in relation with EI and barriers to completion (*Academic success and EI*); the second one examines academic achievement, which is measured by ECTS and retention versus dropout in relation with barriers to completion, well-being, positive and negative emotions, and resilience (*Academic success and emotions, well-being and resilience*).

We assumed distinct hypotheses for the first (H1) and second study (H2) based on inconsistent findings and the paucity of studies on tertiary education.

Hypothesis 1.1 (H1.1). *ECTS are positively associated with GPA admission, expected GPA, relationships with high school teachers and IE and negatively with barriers to completion of study and early dropout intention.*

Hypothesis 1.2 (H1.2). *Students' early dropout intention is positively associated with perception of barriers to completion and negative emotions (H2a) and negatively associated with GPA admission, expected GPA, relationships with high school teachers and IE (H2b).*

Hypothesis 1.3 (H1.3). *There are significant differences concerning ECTS, dropout intention, IE, GPA admission, expected GPA, and barriers to completion of study related to gender (H1.3a), to level of academic success (H1.3b) and to categories of students that really leave institutions before the end of the first year and the students' persisting (H1.3c).*

Hypothesis 1.4 (H1.4). *Admission GPA, expected GPA, perception of barriers to completion, gender and IE can predict ECTS (H1.4a) and students' early dropout intention (H1.4b).*

Hypothesis 2.1 (H2.1). *First-year academic performance (ECTS) is positively associated with well-being, resilience, GPA admission, expected GPA, and relationships with high school teachers, and it is negatively with dropout intention, perception of barriers to completion and negative emotions.*

Hypothesis 2.2 (H2.2). *Students' dropout intention is positively associated with perception of barriers to completion and negative emotions (H2.2a) and negatively associated with well-being, resilience, GPA admission, expected, and relationships with high school teachers (H2.2b).*

Hypothesis 2.3 (H2.3). *There are significant differences concerning well-being, resilience, negative and positive emotions, perception of barriers to completion, and relationships with high school teachers related to gender (H2.3a), to level of academic success (H2.3b) and to categories of students that really drop out before the end of the first year and the students persisting (H2.3c).*

Hypothesis 2.4 (H2.4). *GPA admission, expected GPA, perception of barriers to completion, resilience, well-being, and negative emotions can predict 1st-year academic performance (H2.4a) and students' early dropout intention (H2.4b).*

2. Materials and Methods

A cross-sectional research design and quantitative data collection were used to verify the hypotheses.

2.1. Participants

In the first study, 367 full-time undergraduate students have participated, out of which 75.5% are male students. The total population of undergraduate students is also dominated by male students (77%). With regard to the first-year outcomes, 19.9% of students are in real dropout, 30.8% accumulated less than 60 ECTS (students with incomplete ECTS load) and 49.3% have accumulated 60 credits (students with full ECTS load). The second study includes 227 participants, 76.6% male students, which was part of the initial sample. Concerning the first-year outcomes, 18.9% students are in dropout, 39.6% are students with incomplete ECTS load, and 41.4% are students with full ECTS load. The convenience sampling method and volunteer participation are used.

2.2. Research Tools

We collected participants' socio-demographic data (gender), high school performance (expressed by GPA admission), expected performance in first year (expected GPA), dropout cases and official ECTS, the last expressing academic performance at the end of the first study year.

1. *Emotional Intelligence Scale (IE)* [13] is a rating scale to assess self-rated ability EI, with 33 items, using a five-point response scale (5—strongly agree to 1—strongly disagree) and Cronbach's alpha of 0.90. Emotional intelligence comprises four subscales: perception of emotions, optimism/mood regulation/managing own emotions, social skills/managing others' emotions and use of emotions [64].
2. *Well-Being Scale* from the Workplace PERMA-profiler is based on Seligman's well-being theory [33]. We used negative emotions and all five scales of *Well-being*, which measures flourishing in terms of accomplishment, engagement, meaning, positive emotion, relationships, and one item focused on general happiness. The items use

a 10-point Likert-type scale that ranges from 10 (*always*) to 1 (*never*). This scale has 16 items, and the Cronbach's alpha coefficient for overall well-being is 0.85. This instrument has been used to measure well-being in a youth sample [65]. In our study, well-being is used as an antecedent of academic success not as its dimension, because it was measured at the beginning of the study program.

3. *Academic Resilience Scale* (ARS) [42] measures the degree of individual resilience and uses a Likert-type scale that ranges from 1 to 5, the higher score indicating a greater agreement with the statement. The three factors, *Perseverance*, *Reflecting and Adaptive help-seeking* and *Negative affect and emotional response* can be combined to represent a unitary global academic resilience. Cronbach's alpha coefficients are as follows: F1—0.83, F2—0.78, F3—0.80 and 0.90 for global scale.
4. *Dropout Intention Scale* with three items [66] use a 7-point Likert-type scale that ranges from 1 (*Strongly disagree*) to 7 (*Strongly agree*) (i.e., 'I sometimes feel unsure about continuing my studies year after year.') Cronbach's alpha coefficient is 0.86, and a high score indicates high dropout intention.
5. *The Scale of Perception of Barriers to Completion of Study* has 10 items (i.e., 'College is boring') and Cronbach's alpha is 0.79. The items focus on the negative emotions in the higher education setting, students' external obligations and family difficulties, or the desire to become financially self-sufficient/independent. This scale uses a 5-point Likert scale that ranges from 5 (*Very true for me*) to 1 (*Not true for me*), and high scores show greater threats or cost to the completion.
6. *Relationships with high school teacher scale* measures the students' perception of the past education experience (i.e., 'I am not fully understood by my teachers in high school') and uses a 5-point Likert-type scale that ranges from 1 (*Almost never*) to 5 (*Almost always*). Cronbach's alpha is 0.84 for three items, and high scores show positive relationships.

All Cronbach alpha coefficients are performed in our sample. The last two scales have been elaborated by the authors of this study based on their own experience as teachers. The psychometric qualities, such as good internal consistence and convergent validity with other tools, recommend them to be used.

2.3. Procedure

The tools were applied in a paper–pencil format, during classes. Some data concerning dropout intention, perception of barriers to completion of study, relationships with high school teachers and socio-demographic data have been also used in a previous study [54]. The data were collected between 2017 and 2019.

The present study includes new results on emotional intelligence, emotions, well-being, resilience, and students' ECTS, which were all collected between 2017 and 2020. Ethical approval was obtained from the *University Research Ethics Committee*, and informed consent was obtained from all participants prior to data collection.

3. Results

3.1. Academic Success and EI

To analyze the pattern of the associations between the variables (H1.1 and H1.2), Pearson's coefficients were computed (Table 1). Hypotheses were partially supported by data, and more coefficients were small but significant. Overall IE and its scales did not correlate with ECTS but were negatively associated with dropout intention.

An additional result showed that associations between EI and GPA admission (equal to High School GPA) was negative in the subsample of female students but only for the dimension perception of emotions coefficient had a significant level ($r = -0.23$, $p < 0.05$).

To test H1.3a, *t*-tests for gender differences and Cohen's *d* were computed. Male students report higher dropout intentions and perceive more barriers to completion of study. Other variables, such as ECTS, GPA admission and expected GPA at the end of the first year were significantly higher for female students, who have higher abilities for

managing others' emotion and to use their emotions. Cohen's *d* was small and medium for all variables (Table 2).

Table 1. Descriptive statistics and zero-order correlations (H1.1 and H1.2).

Variables	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11
1. ECTS at the end of 1st year	54.99	7.60	1										
2. Dropout intention at the beginning of first year	6.32	3.02	−0.16 **	1									
3. GPA faculty admission	7.39	0.88	0.39 **	−0.11 *	1								
4. Expected GPA first year	7.57	0.91	0.31 **	−0.24 **	0.38 **	1							
5. Perception of the barriers to completion of study	20.17	6.88	−0.22 **	0.55 **	−0.23 **	−0.28 **	1						
6. Perception of emotions	35.29	5.4	−0.01	−0.20 **	−0.01	0.09	−0.25 **	1					
7. Optimism/mood regulation. Managing own emotions	33.57	5.29	−0.04	−0.24 **	−0.05	0.13 *	−0.26 **	0.67 **	1				
8. Social skills/Managing others' emotion	29.34	4.81	0.03	−0.25 **	0.06	0.20 **	−0.27 **	0.69 **	0.65 **	1			
9. Utilization of emotions	23.66	4.03	0.07	−0.18 **	0.11 *	0.16 **	−0.23 **	0.64 **	0.67 **	0.62 **	1		
10. EI—overall score	122.0	16.89	−0.01	−0.25 **	0.03	0.14 *	−0.30 **	0.87 **	0.88 **	0.86 **	0.83 **	1	
11. Relationships with high school teachers	8.00	3.78	−0.25 **	0.08	−0.14 *	−0.15 **	0.20 **	−0.07	0.02	−0.06	−0.18 **	−0.07	1

Note: ** Correlation was significant at the 0.01 level (1-tailed). * Correlation was significant at the 0.05 level (1-tailed).

Table 2. Gender differences (H1.3a).

Variables	Gender	Mean	Std. Dev.	<i>t</i> and <i>p</i>	Cohen's <i>d</i>
ECTS	M	54.15	7.92	3.41 ***	0.42
	F	57.12	6.3		
Dropout intention	M	6.7	4.26	3.8 ***	0.42
	F	5.17	2.96		
GPA faculty admission	M	7.26	0.84	−5.11 ***	0.62
	F	7.79	0.88		
Expected GPA first year	M	7.5	0.95	2.6 **	0.34
	F	7.79	0.75		
Perception of the barriers to completion	M	20.89	7.1	3.98 ***	0.48
	F	17.84	5.56		
Perception the emotions	M	35.12	5.6	−1.12/ns	0.14
	F	35.82	4.73		
Optimism/Managing own emotions	M	33.58	5.34	0.07/ns	0.01
	F	33.54	5.16		
Social skills/Managing others' emotions	M	28.9	4.91	−3.004 **	0.39
	F	30.67	4.25		
Utilization of emotions	M	23.41	4.13	−2.096 *	0.27
	F	24.45	3.68		
Overall emotional intelligence	M	121.17	17.4	−1.48/ns	0.20
	F	124.49	15.13		
Relationships with high school teachers	M	8.16	3.77	1.39/ns	0.17
	F	7.50	3.81		

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ns—non-significant; M = 283 participants, F = 91 participants.

The proportion of female and male students that persist at the end of the first year was 93.3% and 76.2%, respectively, and Pearson's Chi-Square was significant at a level of 0.001.

To test H1.3.b, one-way ANOVA was used. The hypothesis was partially supported by data (Table 3). Variables barriers to completion and some scales of IE did not differ significantly between the three levels of achievement. No significant differences were found regarding perception of emotions, managing one's own and others' emotions, and overall emotional intelligence.

Table 3. Differences depending on achievement levels at the end of first year (H1.3b).

Dependent Variable	(I)	(J)	Mean Difference (I–J)	Std. Error	Sig.
Dropout intention	3.00	1.00	−2.84	0.61	0.000
		2.00	−1.44	0.46	0.005
GP faculty admission	3.00	1.00	0.75	0.12	0.000
		2.00	0.77	0.09	0.000
Expected GPA first year	3.00	1.00	0.45	0.13	0.002
		2.00	0.53	0.11	0.000
Barriers to completion of study	3.00	1.00	−4.6	1.02	0.000
		2.00	−3.09	0.85	0.001
Utilization of emotions	3.00	2.00	1.39	0.49	0.015
Relationships with high school teachers	2.00	1.00	1.96	0.46	0.000
		3.00	2.3	0.38	0.000

Note: The three levels of achievement are: 3—students with full ECTS load, 2—students with incomplete full ECTS load, and 1—students in real dropout at the end of first year.

To test H1.3.c, a *t*-test for independent samples was used, and the assumption was partially supported by data, Cohen's *d* being large only for ECTS (Table 4).

Table 4. Differences between the students in real dropout and the students that persist at the end of the first year (H1.3c).

Variables	Conditions at the End of 1st Year	Mean	Std. Dev.	<i>t</i>	Cohen's <i>d</i>
ECTS	Students who dropout	32.86	11.7	5.1 **	2.38
	Students who persist	55.52	6.7		
Dropout intention	Students who dropout	8.18	4.8	3.81 ***	0.54
	Students who persist	5.87	3.7		
GPA faculty admission	Students who dropout	7.01	0.83	4.15 ***	0.51
	Students who persist	7.48	0.86		
Expected GPA first year	Students who dropout	7.37	1.0	2.06 *	0.27
	Students who persist	7.62	0.88		
Perception of barriers to completion of study	Students who dropout	23.05	7.3	3.8 ***	0.51
	Students who persist	19.49	6.6		

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Depending on correlations (Table 1), we have run two hierarchical regressions with dependent variables: ECTS and dropout intention to test H4 (Table 5). In the first hierarchical regression, ECTS have weekly predictions. Their predictors are gender (1st model, $R^* = 0.024$), expected GPA and GPA admission (2nd model, $R^* = 0.17$) and relationships with high school teachers ($R^* = 0.20$). Psychological variables did not predict performance at the end of the first year.

Table 5. Two hierarchical regressions in the first study (H1.4a and b).

Dependent Variables		ECTS at the End of the First Year (R3* = 0.20)				Dropout Intention at the Beginning of the First Year (R3* = 0.34)					
Model	Independent Variables	Coefficients		t	Sig.	Part corr.	Coefficients		t	Sig.	Part Corr.
		B	Beta				B	Beta			
1	(Constant)	52.2		39.9	0.000		7.9			0.000	
	Gender	2.5	0.16	2.6	0.009	0.16	-1.4	-0.15	-0.15	0.006	-0.15
2	(Constant)	24.1		5.7	0.000		14			0.000	
	Gender	1.1	0.07	1.2	0.25	0.06	-1.2	-0.13	-0.13	0.023	-0.13
	GPA faculty admission	2.4	0.28	4.7	0.000	0.26	-	-	-	-	-
	Expected GPA first year	1.6	0.19	3.2	0.002	0.18	-0.8	-0.19	-0.19	0.001	-0.19
3	(Constant)	29.7		6.5	0.000		4.3			0.05	
	Gender	1.02	0.06	1.13	0.26	0.06	-0.2	-0.02	-0.02	0.62	-0.02
	GPA faculty admission	2.2	0.26	4.4	0.000	0.24	-	-	-	-	-
	Expected GPA first year	1.4	0.17	2.8	0.005	0.15	-0.18	-0.04	-0.04	0.41	-0.04
	Relationships with high school teachers	-0.34	-0.17	-3.1	0.002	-0.17	-	-	-	-	-
	Perception of the barriers to completion of study	-	-	-	-	-	0.3	0.53	0.48	0.000	0.48
	Managing others' emotions/social skills	-	-	-	-	-	-0.09	-0.11	-0.10	0.03	-0.10

Note: Variables without values do not enter because they did not significantly explain the dependent variable.

For dropout intention as a dependent variable (H4b), criteria are gender (1st model, $R^* = 0.024$), followed by expected GPA in the first year (2nd model, $R^* = 0.06$). For the 3rd model, we added variables: relationships with high school teachers, barriers to completion, and managing others' emotions/social skills ($R^* = 0.34$). Other IE dimensions did not have a significant influence on the dependent variable. All models were significant, and H4 was partially supported by data.

3.2. Academic Success and Emotions, Well-Being and Resilience

In the second study, many investigated variables were correlated with ECTS at the end of the 1st year and dropout intention (Table 6).

Table 6. Descriptive statistics and zero-order correlations (H2.1 and H2.2).

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. ECTS	1															
2. Dropout intention at the beginning of the first year	-0.15*	1														
3. GPA_faculty_admission	0.46**	-0.17**	1													
4. Expected GPA	0.33**	-0.23**	0.38**	1												
5. Barriers to completion	-0.26**	0.53**	-0.23**	-0.28**	1											
6. Positive emotions—PERMA	-0.05	-0.31**	0.03	0.11	-0.38**	1										
7. Engagement—PERMA	0.16*	-0.26**	0.14*	0.15*	-0.37**	0.40**	1									
8. Relationships—PERMA	-0.04	-0.20**	-0.02	0.08	-0.32**	0.50**	0.26**	1								
9. Meaning—PERMA	-0.09	-0.38**	0.05	0.13*	-0.38**	0.72**	0.41**	0.49**	1							
10. Accomplishment—PERMA	0.11	-0.35**	0.08	0.18**	-0.47**	0.40**	0.73**	0.34**	0.42**	1						

Table 6. *Cont.*

11. Well-being total score—PERMA	0.001	−0.37**	0.05	0.17*	−0.46**	0.81**	0.69**	0.74**	0.79**	0.74**	1					
12. Negative emotions—PERMA	0.10	−0.14*	0.05	−0.03	−0.10	0.04	−0.09	0.05	0.02	−0.11	−0.05	1				
Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13. Perseverance—ASR	−0.05	−0.11	0.03	0.13*	−0.14*	0.22**	0.35**	0.2**	0.24**	0.4**	0.37**	−0.09	1			
14. Reflecting and adaptive-help seeking—ASR	−0.07	−0.18*	0.05	0.12*	−0.25**	0.34**	0.42**	0.23**	0.35**	0.48**	0.46**	−0.7	0.61**	1		
15. Negative affect and emotional response—ASR	−0.14*	0.26**	−0.05	−0.16*	0.29**	−0.13*	−0.25**	−0.08	−0.07	−0.33**	−0.22**	0.16*	−0.04	−0.16*	1	
16. Academic resilience total score—ASR	−0.13*	−0.01	−0.01	0.02	−0.06	0.20**	0.29**	0.17*	0.26**	0.28**	0.31**	0.04	0.81**	0.75**	0.43**	1
Mean	54.99	6.3	7.4	7.6	20.2	22.8	20.8	23.6	23.3	21.3	120.1	17.5	45.8	31.4	17.9	95.3
SD	7.6	4.03	0.9	0.9	6.9	5.3	4.6	6.7	4.6	4.8	20.7	5.8	6.3	6.0	6.2	12

Note: ** Correlation was significant at the 0.01 level (1-tailed), * Correlation was significant at the 0.05 level (1-tailed).

Concerning well-being, negative emotions, and academic resilience, we did not find significant gender-related differences. Thus, H2.3a was not supported by our data and H2.3b was partially supported (Table 7). There were not significant differences between the students in real dropout and the students that persist concerning well-being, except for accomplishment and engagement. Out of resilience, only negative affect and emotional response are different between the compared levels of academic success. Other mean differences did not reach statistical significance.

Table 7. Differences (one-way ANOVA) depending on achievement levels at the end of the first year (H2.3b).

Dependent Variable	(I) 3, 2, 1	(J) 3, 2, 1	Mean Difference (I–J)	Std. Error	Sig.
Engagement—PERMA	3.00	1.00	2.7	0.94	0.015
		2.00	2.48	0.64	0.000
Accomplishment—PERMA	3.00	1.00	2.51	1.06	0.055
		2.00	2.13	0.66	0.004
Negative emotions and emotional response—ASR	3.00	1.00	−2.9	1.20	0.049
		2.00	−3.27	0.93	0.002

Note: 1—students in real dropout; 2—students with incomplete ECTS load; 3—students with full ECTS load.

H2.3c was partially supported by data; only two dimensions of well-being showed significant differences between the students persisting and dropping out (Table 8).

Table 8. Differences for two well-being dimensions between dropping out and persisting students.

Variables	Factor	Mean	Std. Dev.	t	Cohen’s d
Engagement	Students who dropout	19.62	5.39	1.91(ns)	0.31
	Students who persist	21.12	4.39		
Meaning	Students who dropout	21.66	5.99	2.09*	0.40
	Students who persist	23.72	4.14		

Note: * $p < 0.05$, ns—non-significant.

To verify H2.4, we have computed the regression with dropout intention and ECTS as dependent variables and tested more models. Barriers to completion of study explained a high variance for dropout intention, and GPA admission explained a high variance for ECTS (Table 9). Although R* values were small, the variability of the sample being higher, the significance of the criteria was higher.

Table 9. Hierarchical regressions with dropout intention as dependent variable (H2.4b).

Model		Dropout Intention (R*(4) = 0.35)					ECTS at the End of the First Year R*(4) = 0.29				
		Coefficients		t	Sig.	Part Corr	Coefficients		t	Sig.	Part Corr
		B	Beta				B	Beta			
1	(Constant)	7.6		8.7	0.000		49.83		26.26	0.000	
	Gender	-1.27	-0.14	-1.9	0.058	-0.14	3.87	0.23	2.79	0.006	0.23
2	(Constant)	14.59		6.2	0.000		18.90		3.08	0.003	
	Gender	-0.96	-0.11	-1.47	0.144	-0.11	2.23	0.14	1.72	0.088	0.13
	GPA admission	-	-	-	-	-	2.92	0.34	4.15	0.000	0.32
	Expected GPA first year	-0.98	-0.23	-3.16	0.002	-0.23	1.53	0.18	2.18	0.031	0.17
3	(Constant)	4.22		1.78	0.077		25.99		3.72	0.000	
	Gender	-0.05	-0.01	-0.09	0.926	-0.01	1.83	0.11	1.41	0.161	0.11
	GPA admission	-	-	-	-	-	2.83	0.33	4.06	0.000	0.31
	Expected GPA first year	-0.57	-0.13	-2.1	0.037	-0.13	1.25	0.14	1.76	0.081	0.13
	Barriers to completion of study	0.3	0.53	8.29	0.000	0.51	-0.19	-0.16	-2.05	0.043	-0.15
4	(Constant)	4.54		1.8	0.073		39.09		4.52	0.000	
	Gender	-0.022	-0.002	-0.04	0.969	-0.002	2.00	0.12	1.57	0.118	0.12
	GPA admission	-	-	-	-	-	2.76	0.32	4.03	0.000	0.30
	Expected GPA first year	-0.53	-0.12	-1.98	0.05	-0.12	1.22	0.14	1.75	0.082	0.13
	Barriers to completion of study	0.27	0.49	7.39	0.001	0.45	-0.21	-0.18	-2.29	0.023	-0.17
	Negative emotions—PERMA	-0.08	-0.13	-2.08	0.04	-0.13	-	-	-	-	-
	Negative affect and emotional response—ASR	0.07	0.12	1.8	0.07	0.11	-	-	-	-	-
	Academic resilience—total score	-	-	-	-	-	-0.13	-0.19	-2.48	0.014	-0.18
	ARS	-	-	-	-	-	-	-	-	-	-

4. Discussion

Students’ difficulties in the first study year and the importance of the academic success for individuals, universities and society are recognized in the literature [5]. Our findings about the influence of emotional intelligence, emotions, resilience and well-being on the academic success partially support the results of previous studies, adding variables such as barriers to completion of study and comparing the dropout intention at the beginning of the first year with real dropout and achievement at the end of the first study year. Some variables can explain more learning outcomes; thus, gender, expected GPA and barriers to completion of study influence both ECTS at the end of the first year and early dropout intention. Negative emotions and managing others’ emotions influence dropout intention, while academic resilience influences ECTS at the end of the first study year.

4.1. Gender Differences

We found that female students report greater emotional intelligence compared with their peers in line with other studies [13]. This advantage concerns only managing others’ emotions, which is consistent with previous studies that found gender-related differences on the EI interpersonal scale [14]. Other scales of IE did not show gender-related statistically significant differences, which is in line with previous reports [15]. With regard to the utilization of emotions and overall emotional intelligence, gender-related differences were negligible in our sample. Female and male students do not differ significantly in terms of positive and negative emotions, well-being, and academic resilience, the results regarding the last variable being consistent with previous studies [42].

In our sample, male students perceived more barriers to completion and have higher dropout intention. Although the forestry sector is male-dominated [67] in our study, female students persist more than their peers, have higher admission GPA [46], higher expected GPA, and higher performances at the end of the first year. The proportion of female students that persist at the end of the first year is higher compared with male students, which is in line with European tendency in higher education [58] and a review of European

research [68]. Some authors explain the female students' performance by the control of other colleagues' and teachers' negative impressions related to their gender [69]. Thus, prerequisite and expectancy may explain the performance.

4.2. Differences Depending on Achievement and Persistence/Dropout Intention

Our findings show that students that persist and those with full ECTS load use their emotions more effectively compared with their peers with incomplete ECTS load and in real dropout according to previous studies [20]. Students who persist have higher admission GPA and expected GPA, and they perceive lower barriers to completion and also lower cost of studying. At the beginning of the first study year, these students have reported lower dropout intentions compared with underperforming students at the end of the first study year [22].

Students with a full ECTS load at the end of the first year report higher accomplishment and engagement and feel weak negative emotions concerning aversive academic assessment compared with both categories, with lower performance (incomplete ECTS load) or with those who withdraw [37]. This result is expected because engagement serves as a facilitator of learning achievement [38], reflecting students' absorption, interest, and involvement in one's work and the tendency to be objective as well as feeling able and responsible to complete their tasks [33]. Among students with lower performance or those that withdraw from their study programs, negative emotions and emotional responses in threatened situations are higher compared with those having academic success (60 ECTS), according to previous studies [17,70]. Although we did not measure the emotions directly related to learning activities, the results of the general students' emotions, measured by work PERMA-profiler, are similar.

4.3. Correlates of Students' Performance and Dropout Intention

Performance at the end of the first study year was not associated with EI, which is in line with [18], but in contrast with a recent study that found an association for EI ability [21]. By contrast, students that have higher dropout intentions have lower EI and perceive more cost of studying. The participants in our study are in the field of science; thus, our results confirm previous studies that oppose the fields of Science and Humanities. The cited meta-analysis mentions EI as a weak predictor of academic performance in the science field; here, the cognitive ability is found to be an important predictor of academic performance [21]. ECTS/performance are associated in our study with engagement as other studies suggested [35] and with high prior achievement (GPA admission) [49] and expected GPA.

Students with greater well-being feel few negative emotions, are persevering, and seek help to adapt to aversive assessment situations, which is consistent with previous studies [40,41]. As expected, dropout intention is negatively associated with all investigated variables, including general negative emotions, except for barriers to completion of study and negative affect in aversive assessment situations, which are positively associated.

ECTS at the end of the first academic year is negatively associated with academic resilience and its negative affect. This result supports that resilience is a factor that significantly predicts academic success [43], but the relationships are opposed. In our study, the resilience has been measured in aversive assessment settings; thus, the students who were stressed by negative affect during the period of assessment have low academic achievement [71].

In contrast to previous reports [25,26], in our study, students that report higher well-being and positive emotions at the beginning of the study year do not have significantly good performance at the end of the year. Our findings are consistent with the conclusions of a meta-analysis suggesting that well-being and academic achievement are weakly related [72] and do not support other results [25,26].

Students that intend to dropout have lower GPA admission and expect lower performance at the end of the first study year. They feel high negative emotions, their well-being is low, and they report poor abilities to reflect and to ask for adaptive help. Thus, in an aversive assessment situation, these students state that they would not seek encouragement

and different ways to learn, and they would not ask for help from the teacher, parents, and friends. They would not reflect on previous successes to overcome the moment of failure and would be little interested in knowing their own strengths and weaknesses. In this situation, students with high dropout intention report lower well-being, experience higher negative emotions (feel panicked, depressed and disappointed, annoyed), and they begin to believe that their chances of success at university are poor/low [42]. Our results are consistent with the results showing that nursing students that dropped out had a significantly lower resilience [43].

4.4. Explaining the Students' Performance and Dropout Intention

Higher GPA admission, relationships with high school teachers and expected GPA explain ECTS at the end of the first study year. Prerequisites are beneficial to the university performance and may enhance the student's self-confidence and learning involvement, especially in science programs. In our study, students with higher performance report unfavorable relationships with high school teachers; in Romanian high schools, probably, high-achieving students are affected by the pressure of their teachers, which is in line with other studies in humanities and the same academic context [73] and similar with participants from China and Japan [74]. These findings have been explained by the cultural context, which is common for the former communist countries and some countries from Asia, where students experience fewer positive emotions in classroom activities [75]. Students who perceive more barriers to completion have lower performance, which is in line with a study about the cost of studies for mathematics performance [76].

Earlier dropout intention is explained by the barriers to completion and social skills, by gender, and by expected GPA. Thus, students that perceive them as competent to manage others' emotions have a low dropout intention, perceive low cost of studies and expect higher GPA.

In the second study, gender, expected GPA for the first study year, barriers to completion of study and negative emotions explain 34% from dropout intention, which is similar to previous studies [77]. Negative emotions are, in our study, general negative emotions including anxiety, anger (activating emotions) and sad (deactivating emotions) that negatively influence the dropout intention, not the negative academic emotions. Probably, the general negative emotions are, in some conditions, not detrimental for learning, in contrast with some studies that state their unfavorable effect [24]. Sometimes, negative emotions can have an adaptive effect on academic success by the signalization of a need for more effort and attention [30]. Negative affect and emotional response related to threatened assessment situations have an opposite direction of influence, and they tend to marginally favor the dropout. Thus, negative emotions have ambivalent consequences on academic success, depending on learning or life context.

When our participants perceive more barriers to completing their study, they are more likely to give up according to a recent study investigating the perceived cost of studying, which is greater than the perceiving benefit of studying [78]. Thus, some variables explain different dimensions of academic success [4].

With regard to the limitations of our study, it does not differentiate the contrastive factors of the non-persistent students: the students that transfer from the current institution and those that have learning difficulties. Another limitation concerns the separation of measurements for the variables on emotional intelligence on the one hand and well-being, emotions and resilience on the other hand. In a future study, these characteristics should be investigated in the same sample to avoid possible errors. Additionally, unequal samples concerning gender may increase the potential risk of errors, but the female students are under-represented in the forestry study field.

Several reasons may explain the contrasting results obtained in our study compared to previous reports: the variation of measurement instruments, investigated emotions are general emotions not academic emotions, but the tendencies are similar. Our results might be also influenced by other factors at the individual, institutional or contextual level.

5. Conclusions

Early dropout intention was investigated at the beginning of the first year of forestry study and associated to the success/failure at the end of the first academic year. The study also considers emotional variables, previous learning experience, and the costs of completing studies, as perceived by the student, but also cognitive variables, such as grades prior to university studies and the number of credits in the first year of study.

Academic success at university is relevant for individuals, university and society. Our study supports a better understanding of academic success, elaborating more effective interventions for the freshmen adaptation to the academic context, using programs to improve emotional intelligence and resilience. Aspects that are under the control of the teachers, such as workload of the students, the difficulties of adaptation and the assessment practices considered aversive, can be initiated at the beginning of the first study year. Discussions between teachers and students may be based on students' assessment of courses, seminars, and labs to explore students' perceptions, needs, and reactions. The continuous evaluations of teaching quality may complement the final assessment of these activities, which is necessary but not sufficient, because it does not change the negative aspects of teaching, learning and interactions. Discussions on the difficulties of students to better prepare themselves for university life may be initiated by a psychologist.

The dimensions of emotional intelligence may be included in the psychological intervention for the students' personal development and to increase academic performance, EI being, simultaneously, an outcome. At the same time, EI has positive effects on the quality of the learning process and of the students' relationships with teachers and peers.

Because negative emotions in the assessment aversive situation explain the variance of the dropout intention, the use of formative assessment without grades, as an antecedent for the final assessment, could become an organizational change. Such an approach may help students to reduce their test anxiety and reframe the physiological symptoms of anxiety or other negative emotions that can positively change the perception of the learning environment.

Because high school GPA explains the performance in the first study year, this performance may remain an admission criterion at the Bachelor level. STEM programs, including forestry, are beneficial to train students to learn self-regulatory strategies and help them promote more positive academic emotions early in their academic and non-academic life.

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