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Emotional and Behavioural Engagement among Spanish Students in Vocational Education and Training

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Abstract: The purpose of this study is to analyse the importance of student engagement in Vocational Education and Training (VET) in Spain. In accordance with this concept, we analyse how emotional engagement (relations with teachers, relations with peers, family support for learning, and perception of family commitment) influences the behavioural engagement (school effort and commitment, school indiscipline) in academic activities of students in basic and intermediate VET. The sample comprises 1180 students (65.4% male), 28.8% in basic VET and 71.2% in intermediate VET, ranging in age from 14 to 19 years. Data analysis bases on linear regression and regression trees enable the prediction of behavioural engagement according to the subdimensions of emotional engagement, sociodemographic characteristics of the subpopulations, and level of studies. Significant differences were found ($t(1013.8) = 8.37$, $p < 0.001$) for the variable of sex (a higher value in females), and variable of the level of studies ($t(579.1) = 3.60$, $p < 0.001$) in behavioural engagement. All correlations between the indicators for the behavioural and emotional dimensions were significant. The results provide favourable profiles of behavioural engagement related to having good relationships with the teaching staff, being female, and being enrolled in intermediate VET. These findings imply the reorientation of educational intervention.

Keywords: student engagement; emotional engagement; behavioural engagement; student-teacher relations; vocational education and training (VET)

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1. Introduction

Prevention and reduction of Early Leaving from Education and Training (ELET) is a global concern and a priority in the European Union (EU), as it is one of the major risk factors for inactivity, unemployment, job insecurity, poverty, and social exclusion [1–3]. In this sense, the United Nations declaration "Transforming our World: The 2030 Agenda for Sustainable Development" [4] set the international foundations for a sustainability goal for the year 2030. Among the objectives set out in this strategy, objective 4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" is particularly relevant as it specifies the need for children and young people to complete primary and secondary education in order to have the necessary skills for employment and decent jobs.

Early school leavers, or early leavers from education and training (ELET), are defined as the percentage of people aged 18 to 24 who have only lower secondary education or less and are no longer in education or training [5]. Specifically, Spain is the EU country with one of the highest ELET rates, standing at 17.9% in 2019, well above the EU average of 10.6% and far from the objective of 10% set by the European Commission. Within the Spanish

context, this problem is severe in the Autonomous Community of the Balearic Islands, which has an ELET rate of 24.4% [5]. In this region, the economy is focused primarily on tourism with a labour market traditionally characterised by the easy recruitment of young people without qualifications, acting as an attraction for the young population and specifically for those disengaged from the educational system (1). Paradoxically, in the long-term, youth with a low level of education face the highest rates of unemployment. Thus, the youth unemployment rate in Spain stands at 23% in 2019 (compared to 11% in the EU), with a varying impact across different educational levels: 31.6% for young people with low educational level; 23.7% for those with intermediate studies, and 16.6% for those with higher education [6].

In this scenario, many studies highlight the strategic importance of vocational education and training (VET) to prevent ELET and to reduce youth unemployment [7,8].

The Spanish VET system is organised in three levels: basic VET (BVET), intermediate VET (IVET) and higher VET (HVET) (all levels with a duration of two academic years). BVET was established in Spain in 2014–2015 and is geared towards students who have not completed compulsory secondary education (ISCED 2) and are at risk of leaving education as a vocational option, in order to reduce ELET and to ensure youth permanence in the educational system. Those who attend BVET start this training at the age of 14 and, at the end, receive a VET Level 1 credential which enables students to continue in IVET. However, IVET begins after the end of compulsory education (at the age of 16) and, once completed, allows access to higher VET. We focus this research specifically on basic and intermediate VET, the stages with the most impact on the prevention of ELET.

Vocational education and training in Spain have two basic characteristics. Firstly, the low participation of young people in this training as it is still considered a second category option. Secondly, the high levels of dropout in this training between students. Nonetheless, despite efforts to bolster VET in Spain, students show a clear preference for academic over vocational studies: only 33% of students who pass post-compulsory secondary education for the first time take vocational training, whilst the EU average stands at 46.3% [8].

At the same time, there is a growing concern regarding the high dropout rates in BVET and IVET; it is estimated that more than half of these students leave this training without the corresponding qualification [1,5]. ELET data for VET show that 21.6% of BVET and 22.5% of IVET students thought about leaving school during the first three months after starting training; 31.9% of BVET and 29.7% of IVET students left training between the first and second year of study; and 54.6% of BVET and 43.9% of IVET left training three years after starting [9,10].

Early school dropout should be seen as a complex dynamic process of progressive educational disengagement that involves individual, institutional and contextual factors [11–14]. The influence of student engagement is central in the analysis of the processes of early leaving from education and training and school perseverance [15,16]; that is to say, "active student engagement" positively influences learning processes and academic success [17] and acts as a preventive factor of dropout [18–20].

There is a high consensus to conceptualise engagement as a meta-construct that addresses different components: cognitive, emotional and behavioural engagement [19,21]. According to Fredericks, Blumenfeld and Paris [19], engagement is presumed to be malleable, and recent research has indicated that student engagement varies from one learning situation to another [22].

Consistent with previously conducted research on student engagement, we adopt a model of associations between context, engagement, and student outcomes [23]. This model exposes the belief that the student perspective is essential for change in student learning and behaviour. Specifically, this research focuses on the analysis of emotional engagement in school as an essential dimension to promote behavioural engagement of the student. These authors speculated that emotional engagement is potentially a mediator of academic and behavioural engagement; in other words, engaging or disengaging

students emotionally precedes changes in student behaviour and academic engagement, achievement and adjustment [16].

Particularly, emotional engagement is defined as students' perceptions of their relations with teachers and peers and the support from and perceived commitment of their families. The emotional dimension evaluates the degree of security, honesty, and attention that the student perceives about his or her teachers; the degree of support, communication and respect perceived from peers; parents' availability and family support in facing conflicts; and parents' expectations regarding completion and continuation of studies [21].

Behavioural engagement, an observable dimension, refers to one's active involvement in learning and includes the effort expended on academic tasks (e.g., doing homework, paying attention in class, and working hard) as well as participating in school and following school rules [11,19]. The behavioural dimension also involves the student's feeling of competence and control in the carrying out of school activities, self-perception of effort, and the implementation of disciplined behaviour in the school context [11,19,24].

1.1. The Influence of Emotional Engagement on Behavioural Engagement

A significant body of theoretical and empirical work explicates the importance of enhancing youth's emotional engagement in school as a way to address issues of underachievement, truancy, and school dropout [16,25]. By and large, the literature suggests that positive social support will facilitate school engagement, particularly if the social partners encourage behavioural engagement [26–28].

When students identify and interact positively within the school context, they participate more actively in school activities and present fewer behavioural problems; consequently, dropout is prevented. In short, emotional engagement with the school is a prerequisite for student effort, school persistence, and academic achievement [19,29–31].

Along these same lines, through a longitudinal study, Skinner et al. [32] established how emotional commitment (positive or negative emotions) predicts an increase in behavioural commitment (effort, attention, and persistence) among students aged 10 to 13 years. Moreover, the effect size of emotional engagement on behavioural engagement is significantly larger than the inverse. Further, students who are emotionally involved at the beginning of the school year display growing behavioural commitment, and a decrease in behavioural disaffection throughout the academic year, compared to students who do not mention such emotional perceptions.

Li, Lerner and Lerner [33], used a sample of students, explaining that emotional engagement (through the involvement of parents, peers, and the school climate) is an antecedent of behavioural engagement. Youth who feel that they belong to the school may be more likely to attend school, complete homework, and come to class prepared, all of which are positively associated with improved academic outcome. In short, repeated studies have demonstrated that behavioural disengagement is a response to emotional discomfort [34]. Also, based on current research, Pan, Zaff and Donlan [31] claimed that social support from parents and teachers predicts the emotional components of academic engagement among reconnected youth, with an average age of 16.50 years, who had previously left school or for whom this was their "last chance" school.

Nevertheless, we know surprisingly little about how emotional engagement constructed in teacher–student interactions, peer relations, and support from and perceived commitment by families contributes to student behavioural engagement; how these ingredients are interrelated; and, further, how these factors promote student involvement in carrying out learning activities [35].

Teacher support is positively associated with behavioural engagement: student participation, work habits, liking of school and academic satisfaction [28]. Schwab [27] analysed predictors of the intention to leave school early and considers that teachers are a proximal, and therefore crucial, influence on student engagement. Through a meta-analysis based on 99 studies, Roorda et al. [36] indicated that the emotional relationship between teachers and students was more important for the behavioural engagement of boys than of girls,

although other studies indicated that it is more useful for the behavioural engagement of girls [22,37], or found no differences based on sex [38]. However, an undue focus upon the pre-eminence of teachers and the support that teachers provide can lead to the false impression that teachers can overcome any individual, family, peer, or community barrier to student engagement [39]. Some studies do not show a significant relationship between both variables [40,41]. Perhaps teachers may be less salient than in previous educational levels for engaging youth, due to the specific characteristics of secondary schools which are, by design, more bureaucratic and impersonal than middle or elementary schools, thereby affording few opportunities for an emotional connection between students and teachers [41]. Some vocational-training teachers promote negative expectations on the positive results that can be obtained by VET students, determining the type of relationship that they maintain with them and conditioning students' behavioural engagement [42].

Second, the type of relationship and social support received by the peer group conditions students' short- and long-term behavioural engagement [43,44]. A good relationship with peers provides emotional support, improves self-esteem and identity development, and has important consequences for subjects' social, emotional, and cognitive wellbeing [45]. In contrast, young people who are rejected and excluded from group dynamics miss opportunities for contact and learning with classmates [46], thus increasing the risk of low participation and a reduced interest in school. In this case, educators who work with VET students can improve the social and emotional skills of the student and promote positive peer relationships to support student engagement [47].

Third, students who have the support and perceived commitment of their families show more interest and are more involved in academic activities, hence preventing school disengagement [17] or risk for dropout. Parents who are receptive to their children promote behavioural engagement [48]. In short, although some studies demonstrate that parental impact decreases towards the end of primary school, others suggest that parents remain a significant influence that can promote engagement throughout secondary school and during adolescence [49]. Family commitment regarding school issues appears to have an indirect effect on students' long-term educational achievements. For example, Hong and Ho [50] found that greater parental involvement (improving parent–child communication on school issues and the educational aspirations of boys over age 13) had indirect effects on improved performances by those young people at age 17.

Numerous studies support the conclusion that when families communicate high, realistic expectations about schoolwork and emphasise the value of effort and working hard, students perform better in school [51].

Some studies have concluded that good relationships with peers and family support and commitment provide greater benefits for issues of behavioural engagement to girls between the ages of 12 and 15 than they do for boys of the same age. Even so, sex does not appear to moderate the effects of relationships with peers or family commitment on academic achievement [44,52,53].

1.2. The Present Study

In this point, we consider the study of engagement in vocational education and training to be especially relevant, firstly due to the scarcity of studies focused on this educational stage and, secondly, because of the specific student's profile in basic and intermediate VET.

This study has three objectives, and the first two relate to the last one (main objective). The first objective is to study the differences in the level of behavioural engagement between the subpopulations determined by the following categorical variables: sex, and level of studies. The second objective is to analyse, through a correlational study, the influence of emotional subdimensions (relations with teachers, relations with peers, support/perceived commitment from family) on the behavioural dimension (based on subdimensions: school effort and commitment, school indiscipline), both globally and in the different subpopulations. The third (main) objective is to establish profiles of engagement by the dimensions

of emotional and behavioural engagement, and the categorical variables analysed using linear regression and regression trees (to detect significant interactions).

2. Materials and Methods

2.1. Participants

The initial sample consisted of 1533 students in Mallorca (Spain) enrolled in the first year of basic vocational education and training and intermediate vocational education and training: 351 were enrolled in BVET and 1182 in IVET of 17 professional branches. The BVET sample included 34 first-year courses distributed across 18 schools, and the IVET sample included 70 first-year courses distributed across 21 schools. To ensure the homogeneity of the sample, this initial population was restricted to students aged 14 to 19 years.

Thus, the final sample consisted of a total of 1180 students (65.4% males): 28.8% in BVET and 71.2% in IVET, ranging in age from 14 to 19 years (BVET: M = 15.89, SD = 0.70; IVET: M = 17.50, SD = 1.00; Total: M = 17.04, SD = 1.18). The sampling error of the central variable of the study (behavioural engagement) was e = 0.028, for a confidence level of 95%.

2.2. Instruments

The questionnaire used, the Vocational Engagement Instrument (VEI), see Appendix A, is specifically oriented to the measurement of student engagement in VET, and contains 52 items with a Likert response format. All items on the questionnaire were codified according to a four-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). The instrument operates a latent three-dimensional structure: behavioural (9 items), emotional (27 items), and cognitive (16 items) engagement. A sociodemographic section with the following variables was also included: sex, age, place of birth, economic situation, family income, and parents' place of birth.

The VEI was validated in a sample of 4522 VET students from different regions of Spain and was based on three instruments: Student Engagement Instrument (SEI) by Appleton et al. [24], Trousse d'èvaluation des décroheurs potentiels (TEDP) by Janosz [54], and Vocational Outcome Expectations Scale (VOE) by McWhirter, Crothers and Rasheed [55]. Specifically, a model comparison approach using Structural Equation Modelling (SEM) was used to test the fit of a set of latent models with the items of the questionnaire. A single-factor model as the base model and a correlated three-factor model were estimated using Confirmatory Factor Analysis (CFA), and the three-factor model (behavioural, emotional, and cognitive dimensions) obtained an adequate fit for both subsamples of BVET (χ^2 = 4891.65, df = 1271, $p < 0.0001$, RMSEA = 0.048, 90% CI RMSEA = [0.046; 0.049], CFI = 0.910, TLI = 0.900) and IVET (χ^2 = 10971.96, df = 1326, $p < 0.0001$, RMSEA = 0.051, 90% CI RMSEA = [0.050; 0.052], CFI = 0.900, TLI = 0.890).

This study analysed emotional engagement and behavioural engagement and the influence between both dimensions using the original VEI. Emotional engagement evaluates subdimensions include the following: relations with teachers (9 items) (e.g., "My teachers are available when I need them"); relations with peers (5 items) (e.g., "My classmates care about me"); family support for learning (4 items) (e.g., "My family is available when I need them"); and perception of family commitment (9 items) (e.g., "It is important to my parents that I pass the course".

Behavioural engagement is measured through three subdimensions: school effort, school commitment (5 items) (e.g., "I study and do my homework every day" and "I would like to go to a college/institute") and school indiscipline (4 items) (e.g., "I disrupt class on purpose").

2.3. Procedure

The instrument was submitted to the university's Committee on Research to guarantee ethical principles, which made it possible to create an encrypted file of personal data managed by the university and research group.

After obtaining the collaboration of the schools, informational meetings were conducted with the school headteachers and then informed consent was obtained from the families of the students younger than 18 years old. Students were informed that their participation would be anonymous, confidential, and voluntary. The average time required to complete the questionnaire was 30 min. Teachers administered the questionnaire to students during class. On each occasion, two to three researchers were present to ensure consistent survey administration. As the students completed the questionnaire, the researchers circulated the classroom, answering the few questions that arose. Students appeared to work independently and to be focused on completing the questionnaire.

This research has been carried out in the framework of a project developed between 2016 and 2018. Specifically, the information was collected during the 2017–2018 school year.

2.4. Data Analysis

All the analyses were conducted using the statistics package SPSS (version 26). Student's t-test was used to analyse the differences between subpopulations (dichotomous) in the behavioural dimension. The effect size of the differences was calculated with Cohen's d (equal variances) or Glass's delta (Δ) (unequal variances).

Pearson correlation coefficients (r) were used to evaluate the relationships between behavioural engagement and the variables of emotional engagement. The effect size of each relationship is expressed in terms of the percentage of explained variance (R^2).

We complemented the classical linear regression with the CHAID algorithm (Chi-squared Automatic Interaction Detection) [56] to generate a regression tree regarding behavioural engagement (dependent variable: DV, generated based on the behavioural subdimensions: school effort, school commitment, and indiscipline). Regression trees allow for the graphical analysis of significant interactions between the independent variables (IV) that explain the variability observed (DV). The algorithm uses the ANOVA F-test to establish the significant divisions in the regression tree.

To achieve our objectives, the following analytic strategy was developed. First, the behavioural dimension was analysed in the subpopulations determined by the variables of sex and level of studies (Table 1). Only statistically significant differences are highlighted in the text, accompanied by their effect size. Second, the correlations between the indicators of the behavioural and emotional dimensions were analysed globally and by subpopulation (with groups determined by the categorical variables) (Table 2). Third, a model was generated in the form of multiple linear regression (Table 3) and a regression tree (Figure 1) to establish the relative predictive power of the independent variables, significant interactions, and their prediction (M: mean value) in terms of the DV (behavioural engagement).

Table 1. Descriptors of the behavioural dimension by subpopulation.

		Sex		**Level of Studies**	
		Males	**Females**	**BVET**	**IVET**
Behavioural engagement	M	2.04	2.26 *	2.03	2.15 *
	SD	0.52	0.41	0.52	0.48
	n	771	409	339	841

* $p < 0.001$.

Table 2. Correlation (r) and explained variance (R^2) between the emotional dimension (IV) and behavioural dimension (DV), differentiated by subpopulation.

		Behavioural Engagement (DV)				
			Sex		**Level of Studies**	
		Global	**Males**	**Females**	**BVET**	**IVET**
Relations with teachers (IV)	r	0.445	0.466	0.393	0.519	0.415
	p	<0.001	<0.001	<0.001	<0.001	<0.001
	n	1180	771	409	339	841
	R^2 (%)	19.8	21.7	15.4	26.9	17.2
Relations with peers (IV)	r	0.200	0.210	0.237	0.128	0.219
	p	<0.001	<0.001	<0.001	0.019	<0.001
	n	1179	771	408	338	841
	R^2 (%)	4.0	4.4	5.6	1.6	4.8
Family support (IV)	r	0.224	0.197	0.274	0.133	0.267
	p	<0.001	<.001	<0.001	0.014	<0.001
	n	1180	771	409	339	841
	R^2 (%)	5.0	3.9	7.5	1.8	7.1
Perception of family commitment (IV)	r	0.307	0.278	0.347	0.267	0.338
	p	<0.001	<0.001	<0.001	<0.001	<0.001
	n	1179	771	408	338	841
	R^2 (%)	9.4	7.7	12.0	7.1	11.4

Table 3. Regression results using behavioural engagement as the criterion.

Predictor	**b**	**b 95% CI [LL, UL]**	**sr2**	**Fit**
(Intercept)	0.527 **	[0.362, 0.692]		
Relations with teachers	0.420 **	[0.363, 0.476]	0.128	
Perception of family commitment	0.207 **	[0.154, 0.260]	0.036	
Sex (Females)	0.193 **	[0.142, 0.243]	0.034	
Level of studies (IVET)	0.119 **	[0.065, 0.172]	0.011	
Relations with peers	0.058 *	[0.003, 0.112]	0.003	
				R^2 = 0.293 ** 95% CI [0.25, 0.33]

Note. A significant b-weight indicates that the semi-partial correlation is also significant; b represents unstandardised regression weights; sr2 represents the semi-partial correlation squared; LL and UL indicate the lower and upper limits of a confidence interval, respectively. * $p < 0.05$, ** $p < 0.01$.

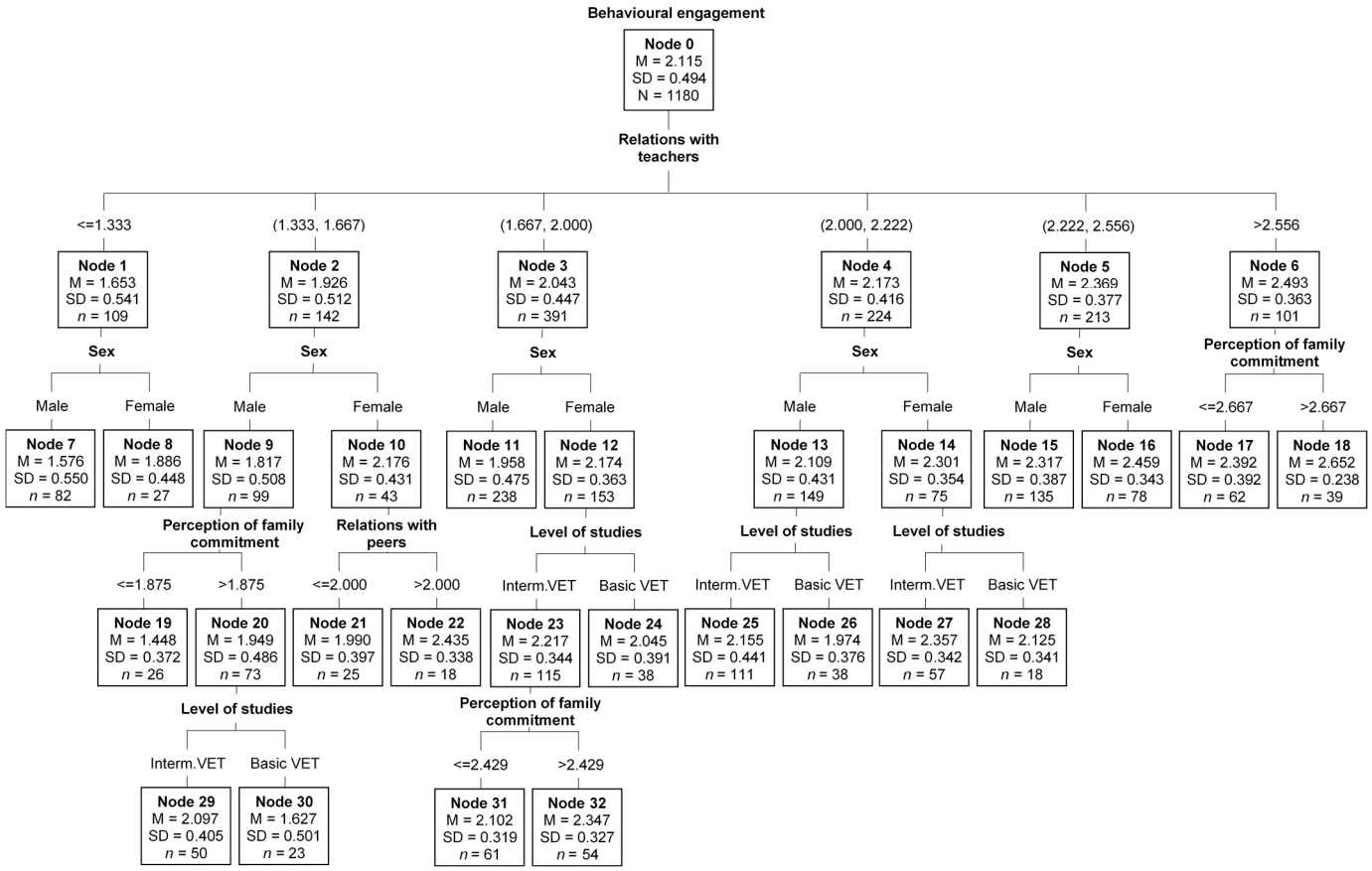

Figure 1. Chi-squared Automatic Interaction Detection (CHAID) decision tree for studying the variability of behavioural engagement.

3. Results

The first block of the analysis evaluated differences in behavioural engagement by subpopulation (Table 1). Significant differences were found ($t(1013.8) = 8.37$, $p < 0.001$) for the variable of sex (a higher value in females), with a moderate effect size ($\Delta = 0.44$). The variable of the level of studies also revealed significant differences ($t(579.1) = 3.60$, $p < 0.001$), although with a smaller effect size ($\Delta = 0.25$); a higher level of behavioural engagement was observed for IVET.

In the second block of the analysis, we calculated the correlations between the indicators for the behavioural and emotional dimensions, both at the global level and by subpopulation (Table 2). All correlations were significant; the coefficient of determination (R^2) shows the effect size in terms of the explained variance by the independent variables.

The variable "Relations with teachers" (IV) presented the most significant correlation with behavioural engagement (DV) at the global level (explained variance of 19.8%) and by subpopulations. Specifically, when we compare sex, the explained variance of "Relations with teachers" in the male subpopulation (21.7%) was higher (in a descriptive way) than in the female subpopulation (15.4%), but without significant differences ($p = 0.072$). Further, the explained variance in the subpopulation of students at the BVET level (26.9%) was higher (with significant differences, $p = 0.019$) than the IVET level subpopulation (17.2%) (see Table 2).

The other emotional dimension variables ("Perception of family commitment", "Family support", and "Relations with peers) presented less explained variance than relations with teachers. Specifically, "Perception of family commitment" shows an effect size of 9.4% (7.7% in males and 12% in females, $p = 0.106$). The other two, although exhibiting somewhat smaller explained variance, show a larger effect size in females (but also without significant differences with males). The effect size of these three variables were higher

among students in IVET, but with significant differences (with BVET) only in "Family support" (p = 0.015) (see Table 2).

Finally, the third and main goal, which relates to the first two, focused the relative predictive power of the independent variables (taking interactions into account) on the dependent variable (behavioural engagement) from a regression tree, as well as the predictive rules or response profiles that emerged from this regression tree (Figure 1). We also provided a multiple linear regression model to show the predictive power of these variables by a classic method, and to compare its results with the regression tree ones.

The multiple linear regression model (Table 3) shows the predictive power (coefficients) of each of the IVs analysed to predict the DV (adjusted R^2 = 0.290, i.e., explained variance of 29%) with an RMSE (root mean square error) of 0.420 (variability of residuals). The variables sex and level of studies were significant in the final predictive model; emotional dimensions were also relevant in the model except for the "Family support" variable, which was not included in the final model due its lack of significance (p = 0.361) and high collinearity (r = 0.634) with "Perception of family commitment".

These findings were confirmed in the regression tree (Figure 1) with a similar (slightly higher) explained variance (adjusted R^2 = 0.305), and a similar (slightly smaller) error between observed and predicted values of DV (RMSE = 0.411). Specifically, our regression tree model shows a similar positional predictive power of IV compared to the linear regression model, i.e., variables associated with higher nodes (those closer to the root node), have greater predictive power than do the variables associated with lower nodes. Moreover, the regression tree makes it easy to obtain the rules that describe the profile or characteristics of a group of cases (subpopulation node) with a predicted value (mean) of DV, and also shows the IV interactions to predict those DV values.

For example, in the subpopulation of Node 2 (poor relations with teachers), the prediction effect of "Sex" changes when it interacts with "Perception of family commitment" among males (Nodes 19 and 20) and with "Relations with peers" among females (Nodes 21 and 22). For males, behavioural engagement decreases when the value of perception of family commitment decreases (Node 19). Meanwhile, for females, behavioural engagement increases when relations with peers also increases (Node 22).

Based on the analysis of rules derived from the decision tree (Figure 1), we can deduce the following:

Given medium-high levels of relations with teachers (Nodes 4 to 6), behavioural engagement levels are also medium-to-high, particularly in the female subpopulation and among IVET students.

Given medium-low levels of relations with teachers (Nodes 1 to 3), behavioural engagement levels are also medium-to-low, with some exceptions: (1) when interacting with medium-high levels of perceived family commitment (which increases behavioural linkage in both males and females; (2) when interacting with medium-high levels of relations with peers (which increases behavioural engagement of females); and (3) when interacting with the level of studies (which increases behavioural engagement in both males and females).

4. Conclusions and Discussion

The results of this study help us better understand student engagement among students in secondary vocational education, based on the analysis of regression trees and predictive variables of behavioural engagement (main objective). In relation to the three objectives of the analysis presented, first, this study's results reveal the differences in behavioural engagement on sex and level of studies, indicating a higher value in females and IVET.

Second, there is a high correlation between behavioural engagement and emotional engagement in student engagement involvement. More specifically, the subdimension "Relations with teachers" is the most relevant to and most predictive of behavioural

engagement among students in the Spanish secondary VET system, compared to the other emotional subdimensions studied [22,27,28].

Many studies share the analysis of the importance of student–teacher relations in student outcomes throughout primary school [57]; however, our study confirms the importance of said relationships in secondary vocational education, especially for students with profiles signalling higher academic risk. For these students, their teachers' abilities to connect with students' diversity, listen to students, and provide emotional support are critical factors in strengthening behavioural engagement [58].

In the third (main) objective (related to the two earlier ones), our study indicates emotional engagement profiles in terms of behavioural engagement based on sex and level of studies. Our study establishes profiles that, although they reflect that low levels of relations with teachers generally predispose students to low behavioural engagement (lower among males than females), they also show that having a heightened perception of family commitment acts as a protective factor (for both males and females) against low behavioural engagement. In this case, by some studies [17], the perception of family commitment is configured as a second relevant variable for behavioural engagement that, perhaps indirectly, favours the academic self-perception of their children [58]. In this case, parents' influence in academic participation occurs more generally when students feel they are valued and considered, and especially among students with previous experiences of dropout or for whom VET is their "last chance" to remain in the educational system [31]. Therefore, we also identified a student profile characterised by confidence in parents and the perception of parental support as a positive element, in which case this support is seen to influence behaviour engagement.

Examining sex, its interaction with "Relations with teachers" increases its predictive value concerning behavioural engagement. Specifically, the data indicate that behavioural engagement is more significant in the subpopulation of females. These results suggest that socialisation processes and the expectations created by teachers and parents about female behaviour may have a more favourable influence on behavioural engagement by females [59–61].

The profiles of female students demonstrating poor relations with teachers could increase their behavioural engagement upon demonstrating good relations with peers. This result supports previous studies [38–44] in which girls benefit, in terms of student engagement, from maintaining peer relationships that are more personal and marked by social support.

The results indicate that there is a significant change effect of "Relations with teachers" (as emotional engagement) on behavioural engagement in the subpopulation enrolled in BVET; hence, it can be asserted that actions directed towards improving relations with teachers in BVET would have greater impact than would similar actions in IVET. However, the data also indicate that independent of the effect of this emotional variable on behavioural engagement, students in IVET demonstrate greater behavioural engagement. This profile of students with medium-high levels of relations with teachers, both females and males, improves behavioural engagement by interacting with the level of study of IVET. In terms of the reasons for this, one might assume that a population of students who have chosen studies with a vocational focus in preparation for a specific profession favours higher levels of engagement.

Another explanation could be that students in BVET, rather than choosing these studies, have been directed towards them due to their low behavioural engagement during compulsory secondary education. The psychosocial changes particular to this adolescent evolutive phase could condition lower levels of behavioural engagement [18] compared to the older age groups that are more common in IVET.

According to the specific profiles, it is necessary to identify student engagement and emotional engagement as a protective factor that strengthens and promotes adaptive development among young people as future members of society [16]. Teacher support

emerged as a potent predictor of behavioural engagement in upper secondary vocational education.

By the study by Perry, Liu and Pabian [62], one possible explanation is that teaching staff are particularly relevant for students because teachers lend value and importance to the educational training students receive. Moreover, the process of students' evolution can reactivate relations with adults other than parents, causing students to seek adult assistance and guidance from teachers despite the common stereotype that their peers more influence adolescents than the adults who surround them [38,63]. This finding demonstrates the importance of having teachers at schools focused on reconnecting youth, who are adept at creating a connection with their students and providing the support that is most relevant to the students' lived experiences [31].

5. Educational Implications

Given the importance of student–teacher relations in the context of secondary vocational education and by the other variables studied, these results imply that educational intervention must formulate quality methodologies that address the interests of both sexes based on training formats, ranging from highly structured and verbal to practical and creative [61]. Meanwhile, we propose more significant emotional support from teachers for students in basic vocational education and training who have a higher likelihood of academic vulnerability and school dropout, perhaps due to the perception that they are unsuited to studies, dislike school, and have a low commitment to education. In this case, the teacher can prevent school dropout by promoting and orienting to students what to do and how to develop desired skills (such as social, emotional, and academics skills), and improving behaviour engagement [14,47] to achieve valued outcomes [64]. The research shows that the teacher's emotional support fosters positive peer relations and greater peer acceptance in the class [47].

On the other, this relation teacher-student will ensure equitable quality education and lifelong learning, as it is set up in ODS 4. What is more, if these relations are successful it is possible to ensure quality technical and vocational education (goal 4.3) and even it will increase significantly the number of young people and adults who have the necessary technical and vocational skills to access employment, decent work and entrepreneurship (goal 4.4.).

Finally, in scholarly and socio-educational arenas, it will be necessary to optimise the interactions students maintain with their immediate contexts, particularly with their families, possibly by improving the educational information provided to parents and enhancing their parental competencies in order to improve students' behavioural engagement [51,65].

6. Limitations and Future Perspectives

Among the methodological strengths of this study, we find the analysis through regression trees more informative than the classical regression model by specifying predictive variables of behavioural disengagement and building profiles that are more exact and closer to psychoeducational reality. Additional strengths include the use of an important representative sample of students in secondary vocational education. The results of this study should also be interpreted according to a series of limitations or future perspectives. First, it should be stated that a longitudinal study of the sample analysed would make it possible to establish the evolution of behavioural and emotional engagement and the relationships between the two. Additionally, the perspectives of students regarding student engagement should be complemented in future studies by including the perspectives and information of teachers (as perceived fit by classmates, the school climate, and support school staff) and families (as higher education parents, job status parents). Future research would make it possible to identify the contextual factors that can contribute to changes in teacher–student relationships in secondary vocational education, such as the vocational speciality chosen.

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Appendix A

Table A1. Item contents by dimensions of the vocational engagement instrument (VEI) three-factor latent model 1, 2, 3, 4 (Strongly disagree, Disagree, Agree, Strongly agree).

Factor 1: Behavioural Engagement
BEH1 I like going to school/centre
BEH2 I work hard at my schoolwork
BEH3 I study and/or do my homework nearly every day
BEH4 When I do an assignment at school/centre, I want to do it well
BEH5 I devote enough time outside school/centre to doing my homework and studying
BEH6 I deliberately disrupt in class
BEH7 I answer teachers impolitely
BEH8 I use crib notes or other means to copy in an exam
BEH9 I've missed class(es) without justification
Factor 2: Emotional Engagement
EMOT1 At my school/centre, most teachers care about students
EMOT2 Teachers in my educational centre are interested in me as a person, not only as a student
EMOT3 In general, my teachers are open and honest with me
EMOT4 In general, teachers at my school/centre treat students adequately
EMOT5 My teachers are available when I need them
EMOT6 Teachers at my educational centre listen to students
EMOT7 The educational centre's regulations are fair
EMOT8 I feel safe at school/centre
EMOT9 I like talking to teachers at my school/centre
EMOT10 My classmates care about me
EMOT11 My classmates help me when I need it
EMOT12 My classmates respect my opinions
EMOT13 I like communicating with my classmates
EMOT14 I have friends at the educational centre
EMOT15 When I have problems at school/centre, my family is willing to help me
EMOT16 My family are available when I need them
EMOT17 When something good happens at school/centre, my family want to know about it
EMOT18 My family want me to try and deal with any problems I might have at school/centre by myself
EMOT19 My parents expect me to continue my studies for as long as possible
EMOT20 For my parents it's important that I pass the course

Table A1. *Cont.*

EMOT21 I'd upset my parents if I left school/centre
EMOT22 For my parents it's important that I do my best at school/centre
EMOT23 My parents know when I have homework or exams
EMOT24 If I have a problem at school/centre, I normally talk it over with my parents
EMOT25 My parents do everything they can to help me get good academic results
EMOT26 I can count on my parents when I have difficulties at school/centre
EMOT27 My parents often ask me how things are going at school/centre
Factor 3: Cognitive Engagement
COG1 Before handing in my assignments or academic tasks, I go over them to check that I've done them right
COG2 When I do a school activity, I try to grasp what I'm doing
COG3 When I make an effort in my studies, the results I obtain are positive
COG4 I consider exams, tests or class activities are a good tool for finding out what I've learnt
COG5 What I'm learning in class is important for my future career
COG6 I compare myself with my classmates to see if I'm learning at the right pace
COG7 Studying is going to supply me with many future job opportunities
COG8 I want to carry on training once I finish my current studies
COG9 The studies I'm doing make me optimistic with regard to my future career
COG10 I study because I like what I'm doing
COG11 Thanks to the studies I'm doing I'll be able to get a job where I'll earn a living
COG12 Thanks to the studies I'm doing I'll be able to go into the career I want to
COG13 My studies will help me be successful in my career
COG14 To do what I really want to, I'll have to carry on training
COG15 The studies I'm doing are suited to my personal characteristics
COG16 I like the profession I'm training in

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