



Maternal educational attainment and other predictors of early dropout risk

El nivel educativo materno y otros factores predictores del riesgo del abandono temprano escolar

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Abstract

Early school leaving is a complex and multicausal problem, which mainly affects vulnerable students. Therefore, the objective of this research is to present a path model of the impact of maternal educational attainment, mediated by academic goals, life satisfaction, attitudes towards authority and sense of belonging, on early-school-leaving risk. The sample comprised 510 students in third and fourth year of Compulsory Secondary Education from secondary schools located in the Poblados Marítimos district of Valencia. The neighbourhoods forming this district, located around the port, have a large vulnerable, immigrant and Roma (*Gitano*) population. Four measurement instruments were used, and descriptive statistics and analyses of variance (ANOVA) were calculated. Finally, a path analysis was conducted to assess the fit of the theoretical model to the data. The results highlight the notable influence of maternal educational attainment on the risk of early school leaving. This is mediated by goals, sense of belonging, life satisfaction and attitudes towards authority. These results coincide with those obtained in other similar studies. Moreover, they could support the implementation of educational policies and actions to reduce school-leaving risk in vulnerable student populations.

Keywords: academic success; life satisfaction; attitude towards school; sense of school belonging; maternal educational attainment; early school leaving.

Resumen

El abandono escolar es un problema complejo y multicausal que afecta fundamentalmente al alumnado en situación de vulnerabilidad. Por ello, esta investigación establece como objetivo presentar un modelo de trayectorias acerca del impacto del nivel educa-

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tivo materno, mediado por las metas académicas, la satisfacción vital, las actitudes hacia la autoridad y el sentido de pertenencia, sobre el riesgo de abandono escolar. La muestra se compone por 510 estudiantes de 3.º y 4.º de la Educación Secundaria Obligatoria de los institutos de los Poblados Marítimos (Valencia). Estos Poblados, situados alrededor del puerto, presentan una gran cantidad de población vulnerable, inmigrante y gitana. Se utilizaron cuatro instrumentos de medida y se calcularon estadísticos descriptivos y análisis de varianza (ANOVA). Finalmente, se utilizó un análisis de trayectorias para evaluar el ajuste del modelo teórico a los datos. Entre los resultados, destaca la influencia del nivel educativo materno sobre el riesgo de abandono escolar temprano. Este está mediado por las metas, el sentido de pertenencia, la satisfacción vital y las actitudes hacia la autoridad. Estos resultados coinciden con los obtenidos en otras investigaciones similares. Además, pueden respaldar la implementación de políticas y acciones educativas para reducir el riesgo de abandono escolar en poblaciones estudiantiles vulnerables.

Palabras clave: éxito escolar; satisfacción con la vida; actitud hacia la escuela; sentido de pertenencia a la escuela; nivel de enseñanza materno; abandono escolar.

1. Introduction

The basic education system aims to develop key competencies in all students regardless of their personal or social characteristics. As such, early school leaving is a systemic weakness (Eurydice, 2021) that requires analysis and intervention (Gbolle & Keamu, 2017).

Early school leaving is a complex issue stemming from multiple factors. González-Rodríguez *et al.* (2019) distribute these factors between non-academic (related to the individual, friends and family) and academic (related to the student body, teachers and school). Typically, this reality represents the culmination of a process of school disengagement, rather than a specific, isolated issue. Thus, it is crucial to identify risk indicators and implement preventive measures.

Early school leaving is defined as the failure of students aged 18-24 to obtain the Compulsory Secondary Education qualification and their subsequent non-participation in any other form of education. This then limits access to qualified employment. Taking this definition as a reference, this study analyses the early-school-leaving risk in students in their third and fourth years of Compulsory Secondary Education (15-17 years old) in an area with a high percentage of students in vulnerable situations. Early school leaving rate indicators are presented in a uniform manner by both the Ministry of Education and the European Union through different reports. With regard to the Valencian Community, the early-school-leaving rate for the 2022-2023 school year stood at 15%, while throughout Spain it was around 14%, in general terms (Spanish Ministry of Education, Vocational Training and Sport, 2024), affecting 64.4% of the Roma (*Gitano*) population (Aguilar *et al.*, 2020) and 29.5% of the immigrant population. The same trend can be observed at European level, although with significantly lower percentages. Overall, the early-school-leaving rate is 9.5%, and around 22% for the immigrant population (Spanish Ministry of Education, Vocational Training and Sport, 2024). These data are consistent with other studies (Escarbajal *et al.*, 2019; Vera *et al.*, 2021), demonstrating that vulnerable students are more likely to fail and drop out of school.

The objective of this study is to assess the impact of maternal educational attainment on the risk of children leaving school, as mediated by the variables: academic goals, life satisfaction, sense of school belonging, and attitude towards authority, using a path model. To do so, it analyses a group of students from the city of Valencia, who live in Poblados Marítimos, an area with families at risk of social exclusion, immigrants and Roma population.

This study differs from other similar studies in that it offers the possibility of analysing and measuring the early-school-leaving risk variable, in addition to observing the mediation of different factors that affect school leaving itself, taking as a reference the mother's educational attainment and its influence on school leaving.

1.1. Some factors associated with early school leaving

1.1.1. Family influence

The family has a radical influence on the moral, social, personal and educational development of children. Regarding school, this is manifested in the ability to help with studies and homework, creating optimal contexts for intellectual and academic development. Similarly, beliefs and expectations around the importance of education (Häfner *et al.*, 2018; Tan, 2017; Tazouti & Jarlégan, 2019) and school engagement (Day & Dotterer, 2018) exert this influence. Therefore, the educational level of parents influences the academic success of their children (Fajardo *et al.*, 2017) and is a protective factor against early school leaving. The percentage of children who leave the education system if their parents previously also left it is significant (Peña *et al.*, 2016). This is related to expectations—academic goals and experiences in school (sense of belonging and attitude towards authority)—and example (Mitchall & Jaeger, 2017). Moreover, this influence is also reflected in the level of household income (Xie & Ma, 2019), i.e. access to educational resources and activities, and school support (Rodríguez-Rodríguez, 2022). These realities instil in the student a feeling towards culture, education and school.

In short, educational and emotional family support becomes a protective factor against early school leaving (Longás *et al.*, 2019), and also against potential anxiety problems (Ferraces *et al.*, 2021). It also influences a more positive attitude towards school and, thus, fewer behavioural problems (Ansari & Pianta, 2019).

1.1.2. Student academic goals

The expectations—academic goals—that students have regarding their school performance affect their commitment to the educational process, their motivation and effort (Barca *et al.*, 2012) and, therefore, their results (Valle *et al.*, 2006). Thus, academic goals are a factor associated with early school leaving, as they determine the way of coping with school life. They group together the beliefs and feelings that direct students' behavioural intentions and consequently condition their affective, cognitive and behavioural reactions (Durán & Arias, 2015). Furthermore, they relate to one's view of oneself, perceived social worth and external rewards.

1.1.3. Life satisfaction

Another factor associated with early school leaving is students' satisfaction with their own lives. This is related to physical, cognitive, school, emotional and social indicators that help establish psychological stability (Carranza *et al.*, 2022; Garnique & Huanca, 2022), allowing for adequate psychoemotional development that acts as a protective factor against early school leaving. In education, this is reflected in the student's engagement with their school, peers and teachers (Merino-Soto *et al.*, 2017). Moreover, it also influences school performance (Salmela & Tuominen, 2010), academic goals (González-Peiteado *et al.*, 2017) and sense of school belonging (Jiao *et al.*, 2017). Therefore, students who are satisfied with school on a personal level perceive a good climate, develop socio-emotional competencies (Ruvalcaba *et al.*, 2017), create positive teacher-student relationships, improve their academic expectations (Huayta *et al.*, 2022) and reduce the likelihood of early school leaving (Merino-Soto *et al.*, 2017; Ventura-León *et al.*, 2021).

1.1.4. Attitude towards institutional authority

A defiant and transgressive attitude from students towards authority (Cava *et al.*, 2013) generates disruptive behaviour, non-compliance with rules (Steffgen *et al.*, 2013), and potential addiction problems. All of these attitudes usually lead to low expectations of academic performance, low levels of life satisfaction (Gálvez *et al.*, 2015) and a low sense of school belonging. They also lead to conflictive relationships with teachers, distancing from the teaching-learning process, and a greater likelihood of early school leaving.

1.1.5. Sense of school belonging

Another factor associated with the risk of early school leaving is the sense of school belonging. This feeling provides a certain degree of involvement and security that has a positive impact on the educational trajectory (Guzmán *et al.*, 2019; Rodríguez-Garcés *et al.*, 2019), as well as on the relationship with peers (Won *et al.*, 2018) and one's own life satisfaction, and creates a positive predisposition towards learning (Knekta *et al.*, 2020). Thus, it reduces the likelihood of early school leaving (Carrasco & Luzón, 2019; John *et al.*, 2018), and serves as a source of social support. On the contrary, the absence of a sense of school belonging leads to attitudes of avoidance or rejection towards study (Corrales *et al.*, 2016), thereby lowering students' academic goals and life satisfaction (Moreta *et al.*, 2017).

2. Method

2.1. Participants

Participating in the study were a total of 510 students in third ($n = 274$) and fourth year ($n = 246$) of Compulsory Secondary Education from six secondary schools in the city of Valencia: Serpis (37.06%), Distrito Marítimo (31.37%), Cabanyal (3.73%), Isabel de Villena (9.22%), El Grau (8.24%) and Baleares (10.39%). 53.14 % were male and 46.86 % female ($\chi^2 = 2.28$ $df=1$; $p > 0.05$). This sample was selected using non-probability purposive sampling. Regarding the parents' educational level, the most frequent category is university education (35.49% fathers and 42% mothers), followed by secondary education (34.90% fathers and 35.88% mothers). The least frequent category is primary education (8.23% fathers and 8.63% mothers). Maternal educational attainment shows fewer missing data (13.53%) compared to paternal educational attainment (21.37%). As for these missing data, in order to perform the analyses with complete cases for each model, they were discarded using listwise deletion. The majority of students had not repeated any year (77.8%), had not considered leaving school early (94.9%), and did not have an average failing mark (95.1%). 22.2% of participants had repeated a year and 4.9% had an average failing mark at the time. In order to calculate the early-school-leaving risk index, we took these three indicators: having repeated a year, currently having an average failing mark, and having considered dropping out of school. Students were grouped into categories of low ($n = 377$; 73.92%), moderate ($n = 105$; 20.59%) or high ($n = 28$; 5.49%) dropout risk.

2.2. Instruments

The instruments used in this research are:

- Socio-demographic data questionnaire. In this study, a series of socio-demographic data were requested from the participants which helped—enabled—us to address issues essential to the research itself. At the same time, these socio-demographic data allowed us to establish profiles and trends, in addition to comparisons according to these variables. Therefore, the questionnaires included the following socio-demographic data: gender, age, nationality, father's nationality, mother's nationality, expected academic results, father's education level, mother's education level, education level you would like to achieve, whether you have ever repeated a year, and whether you have thought about leaving school early.

- Achievement goal tendencies (AGT) questionnaire (Hayamizu & Weiner, 1991). This is a 20-item Likert-type scale (1 = never; 5 = always), which measures three types of goals: learning goals (LG) (8 items), performance goals (PG) (6 items) and reinforcement goals (RG) (6 items). It shows adequate reliability and construct validity (González *et al.*, 2000; Veas *et al.*, 2017). The original distribution of items proposed by previous studies was confirmed by means of a confirmatory factor analysis in the present sample, yielding satisfactory fit indices for the theoretical model [$\chi^2(df) = 767.566(167)$; $\chi^2/df = 4.60$; $p < 0.001$; CFI = 0.985; TLI = 0.983; IFI = 0.985; RMSEA = 0.04]. The internal consistency of the scores analysed in the present study was $\alpha = 0.89$ and McDonald's ω of 0.89 for the learning goals/LG dimension; $\alpha = 0.79$, $\omega = 0.82$ for the social/PG dimension; and $\alpha = 0.90$ and $\omega = 0.91$ for achievement goals/RG. The total scale also showed high values for internal consistency of scores ($\alpha = 0.92$ and $\omega = 0.90$).

- Multidimensional Students' Life Satisfaction Scale (MSLSS) (Huebner, 1994). This is a 13-item Likert-type scale (1 = never; 5 = always). Factors related to satisfaction with friends, families and neighbours were eliminated for this study, as they were not the subject of this research. The fit of the original factor structure in the present sample was good [$\chi^2(df) = 264.295(63)$; $\chi^2/df = 4.20$; $p < 0.001$; CFI = 0.990; TLI = 0.988; IFI = 0.990; RMSEA = 0.04]. The internal consistency of the scores for the total scale analysed was $\alpha = 0.883$ and $\omega = 0.893$.

- Attitude towards Institutional Authority Scale (AIA) (Reicher & Emler, 1985). This is a 20-item Likert-type scale (1 = strongly disagree; 4 = strongly agree). It consists of 4 dimensions: positive attitude towards school authority and school (4 items), positive attitude towards transgression (3 items), attitude/perception of injustice (7 items) and attitude/devaluation of studies (6 items). However, for this study, the overall score was used as a measure of general attitudes towards authority. Specifically, only six of the 20 items in the scale are worded positively, measuring positive attitudes. These items were reversed to facilitate internal consistency and reliability analyses of the scale, showing adequate levels of internal consistency for the total score ($\alpha = 0.803$ and $\omega = 0.821$). With these scores inverted, the overall score of negative attitudes towards authority was obtained, similar to other studies (Cava *et al.*, 2013), except for the fact that this study considered the entire scale. Considering the overall score in this study aims to: a) simplify the measurement of negative attitudes; b) reduce the complexity and increase the parsimony of the statistical model; and c) more efficiently reflect general trends in attitudes towards authority. This overall score, far from labelling students as inherently negative, seeks to understand how voicelessness, experiences of structural injustice, and the interplay of their dimensions result in attitudes of distrust towards institutions. The original structure proposed by the authors showed a moderate fit to the data in this study. Nevertheless, item 7 led to a worsening of the scale's internal consistency and reliability indices. After removing it, the fit of the original factor structure was satisfactory [$\chi^2(df) = 577.365(146)$; $\chi^2/df = 3.955$, $p < 0.001$; CFI = 0.959; TLI = 0.952; IFI = 0.959; RMSEA = 0.049]. To answer the questions in this study, we considered using the total scale, which yielded internal consistency scores of $\alpha = 0.803$ and $\omega = 0.821$.

- Psychological Sense of School Membership Scale (PSSM) (Goodenow, 1993). This is a 18-item Likert-type scale (1 = never; 5 = always). The original theoretical model, by dimensions, showed a good fit to the data in this study [$\chi^2(df) = 515.413(131)$; $p < 0.001$; $\chi^2/df = 3.934$; CFI = 0.963; TLI = 0.957; IFI = 0.963; RMSEA = 0.047]. This scale consists of 3 dimensions and 18 items: belonging (3 items), rejection (5 items) and acceptance (11 items). The internal consistency of the scores for the total scale analysed in this study was $\alpha = 0.848$ and $\omega = 0.863$.

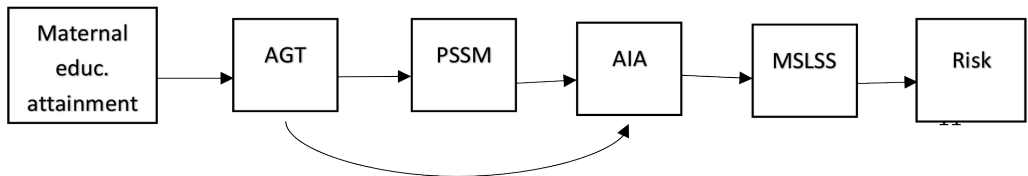
2.3. Procedure

The questionnaires were answered in the schools themselves, voluntarily and anonymously, thanks to the collaboration of the school guidance counsellors. Authorisation was requested from the Valencian Government Department of Education, Culture, Universities, and Employment, the management teams and the families of the students, since they are all minors. The meaning and purpose of the research was explained to the participants, as was the procedure to follow when answering the questionnaire.

2.4. Data analysis

Descriptive statistics were calculated using SPSS v.25 (IBM, 2019) to analyse participant characteristics. In order to assess the fit of the original theoretical model of the scales used (factorial structure), confirmatory factor analyses were conducted. Given the ordinal nature of the data, the method used for these analyses was Diagonally Weighted Least Squares (DWLS) with a robust estimation method. Goodness of fit was assessed by means of CFI, TLI and IFI values close to 1 and RMSEA values less than 0.08 (Kline, 2023). This software was also used to calculate the initial reliability tests, and analysis of variance (ANOVA) was used to assess differences between scores in the different constructs of the study according to parental educational attainment. Effect sizes were calculated using partial eta-squared and Cohen's d was calculated to estimate the effect size of post-hoc comparisons. Partial eta-squared values of 0.01, 0.06 and 0.14 and Cohen's d values of 0.20, 0.50 and 0.80 indicate small, medium and large effects (Goss-Sampson, 2022). The Bonferroni correction for multiple testing was applied to minimise type I error, and Pearson correlations were conducted to analyse the linear relationship between quantitative variables and scores on the constructs analysed. Moreover, to examine differences between groups according to nationality (native-born or immigrant), a multivariate analysis of variance (MANOVA) was performed using psychosocial and motivational indicators (CMA, MSLSS, ACAI and PSSM) as dependent variables. For all differential analyses, the assumptions of homogeneity of variances (Levene, $p > 0.05$) and covariance matrices (Box's M , $p = 0.181$) were tested, as was multivariate normality (Shapiro-Wilk, $p < .001$) in the case of the multivariate analysis. The significance level was set at $p < 0.05$ (95% confidence interval). Finally, a path analysis was used to assess the fit of the theoretical model to the data, in which maternal education attainment was established as a predictor of a higher tendency towards achievement goals (AGT), which would subsequently predict a higher sense of school belonging (PSSM) and a reduction in negative attitudes (AIA). These positive attitudes are, in turn, expected to influence a greater sense of life satisfaction (MSLSS), which would ultimately predict a lower early-school-leaving risk. Our theoretical model is illustrated in figure 1.

FIGURE 1. Theoretical model of influence between variables.



Note: AGT = achievement goal tendency; MSLSS = life satisfaction; PSSM = sense of school belonging; AIA = negative attitudes towards institutional authority; Risk = high risk of school dropout.

This model is based on the impact of educational attainment on the early-school-leaving risk by means of studying the mediating and moderating role of academic goals, sense of school belonging, attitude towards authority, and life satisfaction. All of these variables and their relationships have been studied previously in other research (Giaquinto *et al.*, 2025) without considering maternal educational attainment and its linear influence as a predictor of early-school-leaving risk.

Path analyses enable assessment of the direct and indirect effects of a set of variables on a specific target variable, in this case, the early-school-leaving risk. In this type of analysis, path coefficients—standardised partial regression coefficients—indicate the strength of the effects (ranging from -1 to +1). The fit of the data to the specified model was investigated using the χ^2 test (Kline, 2023).

Furthermore, the fit of the model was assessed by calculating the comparative fit index (CFI), the incremental fit index (IFI), the Tucker–Lewis index (TLI), the root mean square error of approximation (RMSEA) and the standardised root mean square residual (SRMR). A good model fit is indicated by SRMR and RMSEA values close to zero or below 0.80 (Browne & Cudeck, 1993; Hu & Bentler, 1999) and CFI, IFI and TLI values close to 1 or above 0.90 (MacCallum & Austin, 2000; Kline, 2023).

In addition, the amount of variance in all endogenous variables was calculated by means of a regression analysis. Effect sizes for both direct and indirect effects were calculated using standardised coefficients, due to the different scaling of some of the variables. RStudio v.2024.09.1+394 (R Core Team, 2024) and Jamovi v2.318 (Jamovi Project, 2024) were used to estimate both the direct and indirect effects of the predictor variables on students' early-school-leaving risk, as well as the role of the intermediate variables as mediators in the indirect effects.

3. Results

First, descriptive statistics were performed to analyse the scoring profile on the scales administered to the participants. The mean score of the AGT scale was an overall index score of 3.214 ($SD = 0.680$), indicating medium-high overall academic goals. PSSM, sense of school belonging, was the questionnaire with the highest mean score ($M = 3.59$, $SD = 0.59$), followed by MSLSS, life satisfaction, with a mean of 3.13 ($SD = 0.73$). Attitude towards authority (AIA) yielded the lowest mean scores ($M = 2.55$, $SD = 0.53$).

TABLE 1. Means, standard deviations, minimum and maximum scores.

	M	SD	Min	Max
PSSM	3.586	0.589	1.889	5.000
AIA	2.548	0.530	1.158	4.368
AGT	3.214	0.680	1.000	4.800
MSLSS	3.134	0.731	1.083	4.917

Subsequently, the effect of nationality on the set of variables (AGT, PSSM, MSLSS, AIA) was analysed. To do so, a multivariate analysis (MANOVA) was performed. The results showed that nationality had a statistically significant multivariate effect on the set of dependent variables, $\Lambda = 0.977$, $F(4, 505) = 2.98$, $p = 0.019$, $\eta^2_p = 0.023$, suggesting overall differences (overall effects on the set of dependent variables) between the groups. Nevertheless, subsequent univariate ANOVAs showed no significant differences in any of the individual variables ($p > 0.10$). All in all, the results indicated that nationality had an overall (slight) but not specific effect on the dimensions analysed. Further research in this area was therefore ruled out.

Next, we examined the differences in scores according to paternal and maternal educational attainment in the different constructs analysed. They revealed that there were no statistically significant differences ($p > 0.05$ for all scales, in both cases). However, on the AGT scale, we found statistically significant differences in both the maternal [$F(2, 438) = 5.516$; $p < 0.01$; $\eta^2 = 0.025$] and paternal [$F(2, 398) = 5.765$; $p < 0.01$; $\eta^2 = 0.028$] educational attainment. These differences were found, in the case of the mother, between secondary and university studies, with university studies scoring the highest [$t(438) = -3.238$; $p_{Bonf.} = 0.004$; $d = -0.54$]. With regard to the father's educational attainment, group comparisons indicated that, after applying the Bonferroni correction, there were differences between the primary and secondary education groups [$t(398) = -2.576$; $p_{Bonf.} = 0.031$; $d = -0.442$] and between the secondary and university groups [$t(398) = -3.384$; $p_{Bonf.} = 0.002$; $d = -0.580$], always favouring the higher level of education.

Subsequently, the linear relationships were analysed, followed by a path analysis. A correlational analysis was performed between the quantitative variables of early-school-leaving risk, with the constructs of life satisfaction, sense of belonging, negative attitudes and academic goals. To perform the parametric analysis, risk scores were normalised by applying a transformation to the ordinal variable.

Pearson's correlation analysis revealed statistically significant relationships between early-school-leaving risk and all study variables analysed. As shown in table 2, there were negative and statistically significant relationships, albeit with low effect sizes, between risk and maternal educational attainment ($r = -0.194$; $p < 0.001$) and paternal educational attainment ($r = -0.175$; $p < 0.001$), indicating, in both cases, that the higher the level of education, the lower the risk of leaving school early. Similarly, there were inverse relationships between AGT ($r = -0.272$; $p < 0.001$), MSLSS ($r = -0.208$; $p < 0.001$) and PSSM ($r = -0.187$; $p < 0.001$) with early-school-leaving risk, whereby these relationships were negative in all cases, except for AIA ($r = 0.257$; $p < 0.001$). These results indicated that the higher the scores on the above scales, the lower the early-school-leaving risk, except for negative attitudes towards authority (AIA), which showed higher scores with higher early-school-leaving risk.

As expected, AGT was significantly and positively related, with low effect size, to MSLSS ($r = 0.481$; $p < 0.001$) and PSSM ($r = 0.335$; $p < 0.001$), and negatively related to AIA ($r = -0.309$; $p < 0.001$), which, in turn, was also negatively related, with moderate effect size, to MSLSS ($r = -0.640$; $p < 0.001$). These relationships linearly corroborated our initial hypothesis and allowed us to consider the next step in a predictive manner.

TABLE 2. Pearson correlations between continuous variables in the study.

Variable	1	2	3	4	5	6	7
1. M.Educ.	—						
2. F.Educ.	0.587***	—					
3. Risk	-0.194***	-0.175***	—				
4. AGT	0.150**	0.154**	-0.272***	—			
5. MSLSS	0.013	0.070	-0.208***	0.481***	—		
6. ACAI	-0.068	-0.097	0.257***	-0.309***	-0.640***	—	
7. PSSM	0.086	0.039	-0.187***	0.335***	0.644***	-0.613***	—

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

A path analysis was then performed. The model fit showed initial values of $S-B X^2 = 56.595$; $df = 13$; $p < 0.001$. Additional fit indices revealed that the theoretical model demonstrated a good fit to the data: CFI = 0.936, TLI = 0.901, SRMR = 0.066, RMSEA = 0.08 (0.06-0.11).

Table 3 presents the parameter estimates of the proposed path analysis model, providing information on the relationships between the key constructs. The results indicate a statistically significant and negative relationship between MSLSS and the risk variable ($\beta = -0.305$, $p < 0.001$), suggesting that higher life satisfaction is linked to a lower early-school-leaving risk. Similarly (though negatively), PSSM strongly predicts AIA ($\beta = -0.652$, $p < 0.001$), emphasising in this case that a sense of school belonging explains more positive attitudes towards authority.

Furthermore, AGT positively predicted PSSM ($\beta = 0.362$, $p < 0.001$), reinforcing the role of achievement goal tendencies in fostering a sense of school belonging. However, both AGT ($\beta = -0.222$, $p < 0.001$) and PSSM ($\beta = -0.652$, $p < 0.001$) negatively predicted AIA, as expected. Notably, AIA shows the strongest effect in the model, significantly predicting MSLSS ($\beta = -0.871$, $p < 0.001$), thus highlighting its critical influence on life satisfaction.

With regard to maternal educational attainment, mother's education 1 and 2 indicate how the model changes with respect to the reference group (level 1: primary or basic education; level 2: secondary or university education). Mother's education level 2 (M.Educ.2) significantly predicted AGT ($\beta = 0.256, p = 0.014$), while mother's education level 1 (M.Educ.1) showed no statistical significance. This suggests that higher levels of maternal education may contribute to greater achievement goal tendencies in students.

In general, the model highlights how academic goals act as a central element in the dynamics of the other constructs, influencing students' sense of school belonging, reducing negative attitudes and, ultimately, increasing their life satisfaction. This whole process translates into a lower risk of leaving school early, thus demonstrating the importance of strengthening orientation towards academic achievement. Finally, this effect seems to be triggered by maternal education, given that higher levels of maternal education are associated with a greater tendency to set higher academic goals, thus reducing the early-school-leaving risk.

TABLE 3. Estimates of the path model parameters.

Pred.	Dep.	Estimate	SE	95%CI		z	p	
				Lower	Upper			
MSLSS	Risk	-0.062	0.010	-0.082	-0.041	-0.305	-6.018	< .001
AGT	PSSM	0.339	0.045	0.252	0.426	0.362	7.613	< .001
PSSM	AIA	-0.531	0.035	-0.600	-0.462	-0.652	-15.097	< .001
AGT	AIA	-0.169	0.033	-0.234	-0.103	-0.222	-5.064	< .001
AIA	MSLSS	-1.271	0.067	-1.402	-1.140	-0.871	-19.043	< .001
M.Educ.1	AGT	0.175	0.135	-0.090	0.440	0.136	1.293	0.196
M.Educ.2	AGT	0.325	0.133	0.065	0.585	0.256	2.449	0.014

The analysis of the paths specified as indirect effect parameters in the model shows statistically significant relationships that are useful for understanding the factors influencing early-school-leaving risk.

First, the path $AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk$ has a β -value of -0.063 ($p < 0.001$), indicating a significant negative relationship across the different variables. This suggests that a greater focus on academic goals leads to a greater sense of school belonging, less negative attitude towards authority and, thus, greater life satisfaction, which in turn reduces the risk of leaving school early.

Similarly, the path $AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk$ shows a β of -0.059 ($p < 0.001$), reinforcing the idea that academic goals have an indirect effect on early-school-leaving risk through negative attitudes and life satisfaction.

On the other hand, the path $PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk$ shows a β of -0.174 ($p < 0.001$), which reinforces the protective role of sense of school belonging in terms of reducing negative attitudes, improving life satisfaction and reducing early-school-leaving risk.

With regard to the path $AIA \Rightarrow MSLSS \Rightarrow Risk$ suggests a positive β of 0.266 ($p < 0.001$), which indicates that a higher score for negative attitudes increases the early-school-leaving risk through its negative impact on life satisfaction.

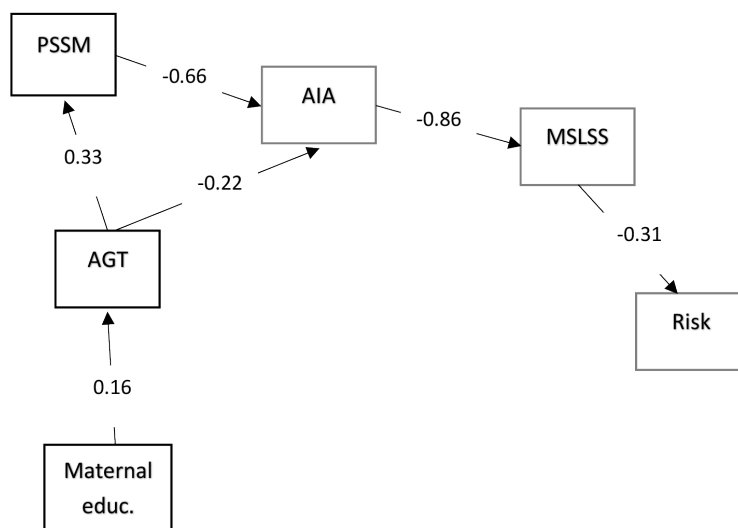
With regard to maternal education, the path M.Educ.1 \Rightarrow AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk shows no significant relationship ($\beta = -0.009$; $p = 0.209$), which indicates that maternal educational attainment in this group does not have any relevant direct or indirect impact on early-school-leaving risk. The same applies to the path M.Educ.1 \Rightarrow AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk ($p > 0.05$). Nevertheless, in the case of M.Educ.2, both paths, M.Educ.2 \Rightarrow AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk ($\beta = -0.016$; $p = 0.037$) and M.Educ.2 \Rightarrow AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk ($\beta = -0.015$; $p = 0.045$), show a significant relationship, indicating that a higher level of maternal education (mothers with university education) has a positive indirect effect in that it improves academic goals, sense of school belonging, life satisfaction and, ultimately, reduces early-school-leaving risk.

TABLE 4. Parameters defined for indirect effects in the path analysis model.

Path	b	SE	95%CI		β	z	p
			Lower	Upper			
AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.014	0.003	-0.020	-0.008	-0.063	-4.616	<.001
AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.013	0.004	-0.020	-0.006	-0.059	-3.629	<.001
PSSM \Rightarrow ACAI \Rightarrow MSLSS \Rightarrow Risk	-0.042	0.007	-0.055	-0.028	-0.174	-5.962	<.001
AIA \Rightarrow MSLSS \Rightarrow Risk	0.078	0.013	0.053	0.103	0.266	6.147	<.001
M.Educ1 \Rightarrow AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.002	0.002	-0.006	0.001	-0.009	-1.257	0.209
M.Educ1 \Rightarrow AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.002	0.002	-0.006	0.001	-0.008	-1.251	0.211
M.Educ2 \Rightarrow AGT \Rightarrow PSSM \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.005	0.002	-0.009	-0.000	-0.016	-2.082	0.037
M.Educ2 \Rightarrow AGT \Rightarrow AIA \Rightarrow MSLSS \Rightarrow Risk	-0.004	0.002	-0.008	-0.000	-0.015	-2.007	0.045

Note: The effect of M.Educ.1 and M.Educ.2 represents how the model changes with respect to the reference group (level 1: primary or basic education). M.Educ.1 = mothers with secondary education (vs. primary education). M.Educ.2 = mothers with university education (vs. primary education).

FIGURE 2. Summary of the path model with standardised coefficients.



Finally, the analysis of the coefficients of determination (R^2) showed that the model's variables had a significant impact on the dependent variables: Risk showed an R^2 of 0.093 ($p < 0.001$), indicating that 9.3% of the variance can be explained by the model's variables; sense of belonging showed $R^2 = 0.131$ ($p < 0.001$), explaining 13.1% of the model; attitude towards authority showed $R^2 = 0.579$ ($p < 0.001$), explaining 58%; life satisfaction showed $R^2 = 0.759$ ($p < 0.001$), explaining 75% of variance; and, lastly, academic goals showed an R^2 of 0.027 ($p = 0.017$), which explains 2.7%. However, its $p < 0.05$ value suggests that, although small, its effect is statistically significant.

4. Discussion

The objective was to assess the impact of maternal educational attainment on the risk of children leaving school early, as mediated by the variables: academic goals, life satisfaction, sense of school belonging, and attitude towards authority.

If the parents' educational attainment is analysed in terms of the variables analysed, we can observe how it influences academic goals. In both cases (father and mother), the higher the parental educational attainment, the higher the children's academic goals (Dixon *et al.*, 2018; Fajardo *et al.*, 2017). Therefore, it is evident that family expectations about studies are reproduced in the children. In contrast, parental educational attainment has no impact on life satisfaction, sense of school belonging or attitude towards authority. Da Cuña *et al.* (2014), on the other hand, found no significant differences in academic performance according to family educational attainment.

If the early-school-leaving risk level is analysed according to the variables, we can observe that all of them have an influence. On the one hand, the higher the parental educational attainment, the lower the early-school-leaving risk. Academic goals, life satisfaction and sense of school belonging show the same tendency. Furthermore, the higher the academic goals, the higher the personal satisfaction (Zakaria & Abdul, 2017), the greater the sense of school belonging (Montero & Turcatti, 2022), and the lower the early-school-leaving risk. These results seem logical, since when we have high expectations regarding our studies (Ortega *et al.*, 2016), and we feel good about ourselves and committed to school, we do not consider

leaving school. Conversely, when we have a negative attitude towards authority (headmaster or teachers), we are more likely to leave school early. This trend coincides with that reported by Griffiths *et al.* (2019) and Montes & López (2022).

If we analyse the dependence between variables, we can see that there is a relationship between the sense of school belonging and negative attitudes towards authority. In other words, the greater the sense of belonging, the better the attitude towards authority. These results are in line with those obtained by Carrasco & Luzón (2019) and John *et al.* (2018). It is also observed that high academic goals are related to a greater sense of school belonging. This finding is shared by Valle *et al.* (2006). Finally, the sum of both variables (sense of belonging and academic goals) also influences attitudes towards authority. A greater sense of belonging and high academic goals imply a more positive attitude towards authority. Other studies (Cava *et al.*, 2013) also report the influence of negative attitudes towards authority on life satisfaction. In contrast, our research did not find such a relationship.

Moreover, with regard to the relationship between the different constructs and the nationality of the students, the multivariate effect suggests a different overall pattern between nationalities. However, the magnitude of the effect suggests that these differences are not substantial and should be interpreted with caution. Future studies could further investigate these effects with larger and more representative samples.

If we analyse maternal educational attainment with early-school-leaving risk, mediated by the different variables, we can observe how academic goals become the central element of the model (Tan, 2017; Tazouti & Jarlégan, 2019). On the one hand, high academic goals lead to a greater sense of belonging and greater life satisfaction (Rodríguez-Rodríguez, 2022). Similarly, high academic goals lead to a more positive attitude towards authority (Mitchall & Jaeger, 2017). All of this results in a lower early-school-leaving risk. The study by Mendoza *et al.* (2024) speaks, in this sense, of the power of families to shape beliefs and attitudes towards education. In addition, it is observed that the triggering element is maternal educational attainment, since the higher the mother's level of education, the higher the student's academic goals. Similar findings were presented by Rodríguez-Rodríguez (2022), Häfner *et al.* (2018) and Li & Xie (2020). Alonso-Carmona (2019) and Lazarides *et al.* (2017) argue that this is due to greater maternal involvement and participation in children's education, as well as greater maternal influence on their values, beliefs, aspirations and attitudes. Along the same lines, Machancoses (2021) speaks of the feminisation of family care.

The observed path coefficients reinforce the theoretical framework linking parental influence with motivational and psychoeducational processes that mediate the early-school-leaving risk. Specifically, significant indirect effects of maternal educational attainment on early-school-leaving risk through AGT, PSSM, AIA and MSLSS suggest that higher maternal educational attainment acts as a cultural and motivational capital resource (Rodríguez-Rodríguez, 2022). In this sense, more educated mothers tend to promote a higher opinion of academic achievement and higher expectations, resulting in a more adaptive learning goal orientation (Mitchall & Jaeger, 2017).

The initial effect of AGT on PSSM and AIA is closely related to Self-Determination Theory (Deci & Ryan, 2000), confirming that academic goals that are more learning-oriented improve sense of belonging (school attachment) and promote more positive attitudes towards institutional norms and figures.

The path $AIA \Rightarrow MSLSS \Rightarrow Risk$ shows that negative attitudes towards authority are associated with lower life satisfaction and higher early-school-leaving risk. This finding complements similar patterns linking institutional distrust and school disengagement with lower well-being and higher vulnerability (Bryk & Schneider, 2002; Fernández-Zabala *et al.*, 2016). Therefore, attitudes towards authority reflect the students' level of trust and psychosocial adjustment, rather than a mere individual trait.

5. Conclusions

The Council of Europe (2011), in its Recommendation on Policies to Reduce Early School Leaving, set as a primary objective to reduce early school leaving—to less than 10 % by 2020 at the latest—as a measure to alleviate the risk of unemployment, poverty and social exclusion. This objective remains far from being achieved. Moreover, it recommended that Member States pay attention to the following aspects: identifying the main factors that lead to early school leaving and ensuring that appropriate strategies are put in place for those groups most at risk of early school leaving: children from socio-economically disadvantaged backgrounds, migrant or Roma children, or children with special educational needs.

The results demonstrate the need to enhance the academic goals of students in vulnerable situations, and also to strengthen their sense of school belonging and their life satisfaction. These variables serve as protective factors against negative attitudes towards authority and early-school-leaving risk. Similarly, fostering the academic and cultural development of families, especially mothers, also plays an important role as a protective factor. It is therefore necessary to intervene with vulnerable students in different ways: establish programmes to improve self-esteem and self-concept in order to increase their academic expectations and level of life satisfaction; carry out activities in schools to foster a sense of school belonging; and finally, establish mechanisms and aid, at the policy level, to enable women to continue their studies beyond basic education.

Thus, it can be seen that by implementing programmes, policies, aid or mechanisms that foster a sense of school belonging, which create a positive sentiment towards the school, teachers and learning; developing high academic goals (expectations), which pursue excellence and not complacency (culture of effort); together with caring for aspects related to mental health (life satisfaction), which provide students with emotional and personal balance, we can reduce negative attitudes towards authority and the risk of leaving school early. These findings should therefore guide educational policies and programmes, since they have a direct impact on learning.

Finally, this study has several limitations that should be considered when interpreting the results. First, the cross-sectional design employed prevents causal relationships from being established between the variables analysed, limiting the conclusions to associations observed at a single point in time. Second, the use of self-reported measures may introduce response biases arising from social desirability, recall errors or subjective interpretations of the items, which could affect the accuracy of the data. Although strategies were implemented to reduce these biases—such as the use of pre-validated questionnaires and the guarantee of confidentiality and anonymity in participation—, it is not possible to rule them out completely. Moreover, there is also another limitation affecting the sample, as only students from one neighbourhood in the city of Valencia, with its own particularities and characteristics, were analysed. Therefore, as a future line of research—already underway—we intend to analyse all the neighbourhoods with a high percentage of vulnerable students in the city of Valencia, in order to present an overview of the problem of early school leaving.

Author contributions

Roberto Sanz Ponce. Conceptualisation, data processing, drafting.

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Pau García-Grau. Conceptualisation, data processing, drafting.

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