García Gràcia, M., Merino Pareja, R., and Sánchez Guerrero, L. (2026). Educational dropouts in post-compulsory transitions: The weight of educational outcomes from an intersectionality perspective. *Revista de Investigación Educativa, 44.* https://doi.org/10.6018/rie.637771

Educational dropouts in post-compulsory transitions: The weight of educational outcomes from intersectionality

Abandonos educativos en las transiciones post obligatorias: El peso de los resultados educativos desde la interseccionalidad

Maribel García Gràcia*[1] , Rafael Merino Pareja*, and Laia Sánchez Guerrero*

*Department of Sociology. Autonomous University of Barcelona (Spain)

Abstract

Educational dropout rates reveal the unequal educational opportunities available to young people, depending on their social background, gender and immigrant status. However, these factors have a different impact on the decision to continue or drop out, depending on previous academic performance and the turning point in the education system. Using data from the register of all students enrolled in non-university education in Catalonia, we analysed the trajectories of continuity or dropout of the cohort of students born in 2001 and enrolled in public education. A universe of 37,128 students. The results show the relevance of previous educational results as a predictor of dropout, particularly dropout after compulsory secondary education and in upper secondary education. The intersectional analysis shows that at the end of compulsory secondary education, low grades increase the probability of dropout among the immigrant population compared to the native population, but the probabilities are equal when the average grade is 6 or higher. In contrast, in intermediate vocational training, average and high grades have a greater effect on the continuity of native youth than on migrant youth, for whom dropout seems to depend less on previous performance. For upper secondary education, the results show a compensatory effect of grades for the immigrant population, with no differences observed by gender.

Keywords: educational dropout; gender; immigrant students; educational transitions.

[1] **Correspondence:** Maribel García Gracia,Maribel.Garcia@uab.cat , Building G6, Office 150. UAB Campus, 08193 Bellaterra (Cerdanyola del Vallès)

Resumen

El abandono de la educación y la formación muestra las desiguales oportunidades educativas de la población joven, según origen social, género y origen inmigrante. Sin embargo, estos factores operan de manera diferente en la decisión de continuar o abandonar según el rendimiento académico previo y el punto de inflexión del sistema educativo. A partir de los datos de registro de la totalidad del alumnado escolarizado en Cataluña en los niveles no universitarios, se ha procedido a analizar las trayectorias de continuidad o abandono de la cohorte de alumnado nacido en el año 2001, escolarizados en la oferta pública. Un universo de 37.128 estudiantes. Los resultados muestran la relevancia los resultados educativos anteriores como predictor del abandono, particularmente del abandono tras la ESO y en el bachillerato. El análisis interseccional muestra que al final de la enseñanza secundaria obligatoria las notas bajas aumentan las probabilidades de abandono de la población inmigrante respecto de la nativa, pero las probabilidades se igualan cuando la nota media es de 6 o superior. En cambio, en la formación profesional de grado medio las notas medias y altas tienen un mayor efecto sobre la continuidad de la juventud autóctona que sobre la juventud migrante, para los que el abandono parece depender menos del rendimiento anterior. Para el bachillerato, los resultados muestran un efecto compensador de las notas para la población de origen inmigrante, sin que se observen diferencias por género.

Palabras clave: abandono educativo; género; alumnado inmigrante; transiciones educativas.

Introduction

Early school leaving remains a major educational, social and economic problem in Spain, despite the downward trend in recent years, as it entails high personal, economic and social costs. Its persistence makes it difficult to achieve the Sustainable Development Goals of reducing social inequality and eradicating poverty, as it is associated with educational and labour exclusion and the risk of poverty and social vulnerability (Gubbels et al., 2019). People who enter the labour market without upper secondary qualifications tend to experience greater difficulties in transitioning to their first job and are at greater risk of precariousness and unemployment (Rumberger, 2020; Rumberger and Lamb, 2003).

Most studies highlight the complexity of the phenomenon due to its multifactorial nature: school, family and personal factors that are affected by social inequalities (Bradley and Renzulli, 2011; Cerdà-Navarro et al., 2020; De Witte et al., 2013; García et al., 2013, 2018; Mas et al., 2016; Merino et al., 2020; Rumberger and Lim 2008; Salvà-Mut et al., 2020; Tarabini, 2017; Tarabini et al., 2019; Valdés, 2019). The abundant literature at national and international level contrasts with a smaller number of studies on educational dropout among young women (García and Panadero, 2023; Martínez 2007, 2011; Sánchez-Gelabert et al., 2024; Vázquez et al 2022), perhaps due to the greater presence of boys in school dropout, a common trend in EU countries, except in Romania and the Czech Republic. This illustrates what has come to be known as the reverse gender gap (Martínez, 2021).

The greater tendency of girls to pursue higher education and university studies has remained consistent over time (Martínez and Merino, 2011). This trend has a positive interpretation for young women who remain in education and a negative one for those who drop out prematurely. Another effect of educational expansion has been inequality in school results according to social background, which has been the subject of study par excellence in the sociology of education since the 1960s and 1970s. Research has also shown that the immigrant population is more likely to achieve poorer academic results and is more likely to drop out of education and training (Carrasco et al., 2018). It is therefore advisable to deepen the analysis of educational dropout from an intersectional perspective for two fundamental reasons: Because the inverted gender gap can contribute to making the educational dropout of young women invisible, even though they tend to have lower activity and employment rates and worse conditions in the labour market (Soler et al., 2021). Because intersectional analysis (gender and migrant origin) allows us to identify the mechanisms that contribute to dropout, without falling into essentialist discourses that reinforce the thesis of cultural deprivation, beyond the social determinants of inequality.

The aim of this article is to shift the focus from post-compulsory transitions to an analysis of dropouts in post-compulsory stages: at the end of compulsory secondary education, in intermediate vocational training (hereinafter CFGM) and in upper secondary education. These dropouts are analysed from an intersectional perspective in order to identify whether there are common patterns or differences in the interaction between educational outcomes, gender, migrant origin of students, or other socio-educational characteristics such as having specific educational support needs for social reasons.

The analysis of inequality in educational opportunities has been developed from two different analytical frameworks. The first is based mainly on the assumptions of cultural reproduction theories (Bourdieu and Passeron, 1964, 1970). This paradigm has some limitations when it comes to explaining the greater educational success of young women, beyond the contribution of the school institution to the reproduction of gender roles and horizontal segregation in the choice of studies (Martínez, 2021). Research shows that dropping out of school is a phenomenon associated with academic performance and the social background of students (Bernardi and Cebolla, 2014; Jackson, 2013). Thus, poor performance is a strong predictor of dropping out of school (Rumberger, 2008). The lower the educational performance, the greater the likelihood of dropping out of school, although this is not the only explanatory factor. Girls are significantly less likely than boys to drop out of secondary education, as their greater educational success encourages them to continue their studies, acting as a protective factor.

The second approach is developed from analytical sociology and the "decisional" model (Boudon, 1974; Breen and Goldthorpe, 1997; Gambetta, 1987). From this conceptual framework, educational choices are the result of a combination of primary and secondary effects. Primary effects (PE), in line with theories of reproduction, explain the influence of

social origin on the academic achievement of students due to the unequal economic, cultural and social capital of families, and occur mainly throughout compulsory schooling. Secondary effects (SE) refer to the impact of social background on educational choices and, therefore, on upper secondary transitions, once the primary effects have occurred. As Bernardi and Cebolla (2014) demonstrate, both effects (primary and secondary) do not operate additively but interactively, giving rise to compensation strategies among students from affluent families when educational outcomes are low.

Research on social stratification has extensively documented that upper-class young people are more likely to follow academic pathways in secondary education and enrol in tertiary education than working-class young people, even when differences in academic performance are taken into account (Jackson, 2013). Thus, the decision-making model (Breen and Goldthorpe, 1997) assumes that individuals and families evaluate educational choices differently according to the costs, benefits and perceived probabilities of success associated with each educational alternative based on their social position. This is due to the relative risk aversion (RRA) mechanism that intervenes in the evaluation of the benefits associated with each educational option. Educational inequalities can be generated by the interaction between loss aversion (of social position) and other decision-making mechanisms, with equal results (Breen et al., 2010), such as the overvaluation or overestimation of the risks of school failure (Barone et al., 2018, Hadjar and Scharf, 2019), or the unequal self-perception of abilities according to social class of origin (Torrents, 2016). This mechanism acts differently according to the social position of young people, so that the more privileged social classes tend to overestimate their abilities and future benefits, regardless of academic results. The ceiling effect pushes them to take riskier decisions to avoid downward social mobility, compared to young people from more disadvantaged backgrounds, even when they have similar academic results. For the latter, less risky decisions are clear evidence of the floor effect.

The greater predisposition of males to drop out of education, compared to females from the same social background, can be explained to a large extent by the latter's higher educational performance. The unequal opportunities for young women in the labour market and the greater pressure on them to take on traditional gender roles also push them towards continuing their studies, a strategy to compensate for the inequalities that exist outside the education system (Martínez 2007). A similar strategy is found among students of migrant origin. Although they face greater difficulties in obtaining ESO accreditation, successfully completing this stage seems to have a greater impact on their educational continuity trajectories (Carrasco et al., 2018), as well as parental optimism, which seems to boost their expectations (Cebolla and Martínez, 2015). r studies such as that by Dollmann (2017) show advantageous transition behaviour for immigrants after compulsory secondary education when academic performance is controlled for. Other more recent studies conclude that girls of immigrant origin are more likely to interrupt their education after compulsory schooling (Sánchez-Gelabert et al., 2024).

Hypothesis

The analysis presented here aims to determine whether there are differences in the likelihood of dropping out of school based on the results obtained from an intersectional perspective. The research hypotheses are as follows:

Model 1. The socio-economic status of students (students with specific educational support needs for social reasons, hereinafter referred to as NESE students), migratory origin and gender as predictors of the probability of dropping out after secondary education, in CFGMs and in upper secondary education.

- H1. Boys, students of immigrant origin and NESE students will be more likely to drop out of education than girls, native students and non-NESE students at the end of compulsory secondary education.
- H2. The probability of dropout among the immigrant population will be similar to that of the native population, both in CFGM and in upper secondary education, due to the lower incidence of grades, as (over)selection and guidance have already taken place.

Model 2. Academic performance and educational dropout: Academic performance does not have the same impact on individuals of different social status.

- H3. Female students of immigrant origin with high grades are more likely to continue after completing compulsory secondary education (ESO) than male students of immigrant origin and have similar probabilities to native female students. When grades are low, female students of immigrant origin are more likely to drop out than male students of immigrant origin and native female students.
- H4. Students with low grades of immigrant origin are more likely to drop out of CFGM and baccalaureate programmes than students with low grades of native origin (compensation effect of students of native origin).
- H5. The probability of continuing in CFGM and upper secondary education among the immigrant population depends more on (high) grades than among native students (grade effect).

Method

Participants

The data used to test the hypotheses come from the student register of the Department of Education of the Generalitat of Catalonia. This is an official register of all students enrolled in Catalonia (universe) in non-university education, which allows their

schooling to be tracked while they remain in the formal education system. Access to this data has enabled a longitudinal analysis of educational pathways at the end of compulsory secondary education (ESO). The cohort of students born in 2001 and enrolled in public education was taken as a reference. A universe of 37,128 students make up the sample under study. The educational pathways in the post-compulsory transition of this cohort have been constructed based on the registration of these same students in the following academic years: 2016-17 (Time 0), 2017-18 (t1), 2018-19 (t2) and 2019-20 (t3).

Despite being a very robust database, the data has some limitations: it does not record the social background of the students, the educational levels of their parents or guardians, or the grades obtained by students enrolled in private schools for the cohort studied. Only the average grade obtained in secondary education is available for public schools, but 75% of immigrant students and 70% of students with specific educational support needs (NESE) for social reasons are in public schools.

Instruments

Methodologically, school dropout is approached from a longitudinal perspective, since the indicator of educational dropout commonly used in official statistics suffers from significant methodological limitations. Understanding dropout requires placing the phenomenon within a cohort analysis and a broader longitudinal trajectory in order to discern whether it is a permanent or temporary situation. There is a need for a more precise conceptualisation (Boylan and Renzulli, 2017; Morentin and Ballesteros, 2020; Suberviola-Ovejas, 2024) in order to understand the complex, transitional, processual and temporary nature of the phenomenon (Van Caudenberg et al., 2017). It is also important to avoid a false representation of homogeneity, as dropping out at the end of compulsory secondary education is not the same as dropping out of vocational training or upper secondary education, both in terms of possible causes and consequences. A uniform perspective on dropout limits the focus of prevention, guidance and support policies (García and Sánchez-Gelabert, 2020), which differ depending on whether the dropout occurs after completing compulsory secondary education, upper secondary education or vocational training.

From this longitudinal perspective, the dependent variables have been constructed based on an analysis of the traceability of the trajectories followed by students upon completing compulsory education (ESO). Three dichotomous dependent variables have been constructed, which are:

- **Dropout after compulsory secondary education.** This is a dichotomous categorical variable that includes the cohort born in 2001, which completed compulsory secondary education in the 2016-17 academic year or in subsequent academic years (2017-18, 2018-2019 and 2019-2020), secondary school repeaters and non-repeaters who do not enrol in any post-compulsory education course,

either in intermediate vocational training or in upper secondary education (dropout at the end of ESO), compared to the population that continues their studies in subsequent academic years.

- **Dropout in intermediate vocational training.** This variable includes the fraction of the cohort born in 2001 who completed compulsory secondary education in the 2016-17 academic year or in subsequent years and who enrolled in intermediate vocational training and dropped out without completing these studies, compared to those who completed them.
- **Dropout** rate **in upper secondary education**. This variable covers the proportion of the cohort born in 2001 who completed compulsory secondary education in the 2016-17 academic year or later and who enrolled in upper secondary education but dropped out without completing their studies, compared to those who did complete their studies. Young people who drop out of upper secondary education to enrol in intermediate vocational training are excluded.

The independent variables considered are:

- Gender:
  - Males
  - Females
- Country of origin of the student:
  - Native (born in Catalonia/Spain)
  - Immigrant (born in other countries) (*generation 1 or 1.75*)
- Students with special educational needs, by social reason:
  - Yes
  - No
- Average mark in secondary education (continuous)
- Average mark in secondary education (categorical):
  - Fail
  - Pass
  - Good
  - Very good
  - Excellent
- Be enrolled in a high-complexity school:
  - Yes
  - No

Procedure

The Department of Education of the Generalitat de Catalunya has been asked to provide the Administrative Register of Students in Catalonia, with the Institute of Statistics of Catalonia being the body responsible for processing and anonymising the

data. A confidentiality agreement has also been signed and measures for the safekeeping and security of the microdata will be respected.

Data analysis

The analytical sample is composed of students for whom we had information available on all the variables in the model, which means 37,128 secondary school students, 7,334 vocational training students and 19,996 sixth-form students. As we only have information on the grades of students enrolled in public institutions, students in private schools are excluded from the analysis. We also included explanatory variables such as gender, migrant origin and grades, while controlling for the complexity of the school.

Given that the dependent variables are dichotomous, we have applied logistic regression models and also dichotomised all the independent variables, except for the average grade obtained in the 2016-2017 academic year. To facilitate data interpretation, we calculated the average marginal *effects*, which provide us with information on the average change that the independent variable produces in the probability of dropping out of the studies under investigation (Tables 2-4). Finally, the grades for the regression models presented in Tables 2-4 have been z-standardised, again with the aim of facilitating interpretation.

We have calculated the probabilities of different student profiles (by gender and migratory origin) in order to discover whether students with the same average grades but different demographic characteristics make different decisions regarding whether to continue or abandon their studies (Table 5). In order to calculate these probabilities, we have categorised the variable "grades" into five categories (failed, passed, good, notable and excellent). Finally, in order to clarify whether there is a non-additive effect of grades according to the demographic characteristics of the student body, we have interacted them with migratory origin (models available in Table A1) and have produced graphs showing the results of the interaction according to the individual's gender (Figures 1-3).

Results

Table 1 describes the variables included in the regression models, taking into account only students enrolled in public schools.

Table 1

Descriptives of the variables in the regression models

		Dropout from...		
Variables		**ESO**	**CFGM**	**Baccalaureate**
Dropout		9.99	22.08	17.19
	N	3704	1,620	3,438
Gender	Male	12.05	22.27	19.88

	N	2,211	991	1,719
	Women	7.98	21.79	15.15
	N	1,498	629	1,719
Immigration status	Native	8.83	22.18	16.15
	N	2,778	1,297	2,809
	Immigrant	16.43	21.69	24.16
	N	931	323	629
NESE	Non-NESE	8.72	21.64	16.98
	N	3,082	1,454	3,334
	NESE	35.42	26.86	28.57
	N	627	166	104
Centre complexity	Not complex	8.75	21.87	15.94
	N	2,747	1,295	2,785
	Complex	16.82	22.98	25.91
	N	962	325	653
Average rating	Failed	60.3	22.76	45.07
	N	2,143	272	64
	Approved	12.28	23.41	50.1
	N	1,184	971	1,455
	Good	2.74	19.09	24.8
	N	294	338	1,459
	Notable	0.71	17.65	4.69
	N	81	39	440
	Excellent	0.04	0	1.18
	N	7	0	20
Total N		37,128	7,334	19,996

Note: All relationships are statistically significant (*** $p < 0.01$) except in the case of the CFGM ( ) vocational training courses, where only the variables "NESE" and "grades" are significant.

The percentage of educational dropouts in relation to students who have continued their studies is described for each level. Thus, dropout rates at the end of ESO (compulsory secondary education) stand at 10%. Dropout rates among young people enrolled in intermediate vocational training stand at 22%, while in upper secondary education they stand at 17%. The data show significant differences for all the variables considered and illustrate a higher probability of dropout among males, students of immigrant origin, NESE students, those enrolled in high-complexity schools and those with lower grades. The differences are particularly relevant among students who drop out at the end of compulsory secondary education (ESO) for students with specific support needs for socio-economic reasons, those enrolled in high-complexity schools, and those of immigrant origin.

In CFGM, only the grades obtained in ESO and specific support needs for socio-economic reasons are significant in explaining the unequal probabilities of dropout.

Table 2

Dropout after ESO

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Men					
(Ref. Female)	0.041	0.041***	0.039	0.039	-0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Immigrant					
(Ref. Native)		0.076	0.058***	0.047***	0.019
		(0.005)	(0.005)	(0.005)	(0.003)
NESE social					
(Ref. No NESE)			0.241	0.225***	0.060***
			(0.011)	(0.011)	(0.006)
Complex Centre					
(Ref. Non-complex)				0.052***	0.017***
				(0.005)	(0.003)
Average score (std)					-0.098***
					(0.001)
Constant	-2.445***	-2.588***	-2.700***	-2.780***	-3.286***
	(0.037)	(0.029)	(0.030)	(0.031)	(0.041)
N	37,128	37,128	37,128	37,128	37,128
R2	0.0071	0.0187	0.0511	0.0572	0.3639

Note. Standard errors in parentheses; *** p < 0.01, ** p<0.05, * p < 0.1

Table 2 shows the unequal probability of dropping out at the end of compulsory secondary education according t variables considered in the regression model. Socioeconomic status is the factor that most increases the probability of dropping out at this transition (24%), followed by being a student of immigrant origin (7.6%), attending a highly complex school (5%) or gender (4% more likely in the case of males). The average grade obtained in compulsory secondary education reduces the probability of dropping out by 10% and the explanatory power of the other variables. Thus, a 1-point increase in the standard deviation of grades is associated with a 9.8% reduction in the probability of dropping out of compulsory secondary education. Considering the effect of the average grade obtained, the probability of dropping out after secondary education, according to socioeconomic status, is reduced from 24% to 6%, the probability of the immigrant population from 7.6% to 2%, and the complexity of the school from 5% to 1.7%. However, the impact of these variables on dropout does not disappear, while the gender differences initially detected cease to be significant, which means that the higher presence of males

in dropout is explained mainly by differences in educational performance.

Table 3

Dropout after CFGM

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Men					
(Ref. Female)	0.005	0.005	0.006	0.006	0.002
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Immigrant					
(Ref. Native)		-0.005	-0.008	-0.009	-0.01
		(0.012)	(0.012)	(0.012)	(0.012)
NESE social					
(Ref. No-			0.054***	0.053***	0.051***
			(0.019)	(0.019)	(0.019)
Complex Centre					
(Ref. Non-complex)				0.010	0.010
				(0.013)	(0.013)
Average score (std)					-0.026***
					(0.007)
Constant	-1.288***	-1.272***	-1.298***	-1.308***	-1.390***
	(0.045)	(0.047)	(0.048)	(0.050)	(0.055)
N	7,334	7,334	7,334	7,334	7,334
R2	0.000	0.001	0.0012	0.0013	0.0029

Note. Standard errors in parentheses; *** p < 0.01, ** p<0.05, * p < 0.1

With regard to dropping out of CFGM programmes (Table 3), only socio- -economic status (SES) and average grade appear to be statistically significant, slightly increasing the probability of dropping out (5.4% and 2.6%, respectively). Unlike dropout at the end of ESO, introducing the average ESO grade into the model does not substantially change the risk of dropout for students with educational needs due to socio-economic status, which is reduced by three tenths (from 5.4 to 5.1%).

Table 4

Dropout from upper secondary education

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Men					
(Ref.					
Female)	0.047	0.049	0.049	0.049***	-0.011
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)

Immigrant (Ref. Native)		0.082***	0.078***	0.061***	-0.010
		(0.009)	(0.009)	(0.009)	(0.006)
Social NESE (Ref. No-NESE)			0.089	0.066***	-0.024*
			(0.023)	(0.021)	(0.013)
Complex Centre (Ref. Non-complex)				0.081	0.047***
				(0.009)	(0.007)
Average score (std)					-0.237***
					(0.004)
Constant	-1.723***	-1.807***	-1.816***	-1.875***	-1.185***
	(0.026)	(0.028)	(0.028)	(0.029)	(0.032)
N	19,996	19,996	19,996	19,996	19,996
R2	0.0042	0.0096	0.0107	0.0158	0.2224

Note. Standard errors in parentheses; *** p < 0.01, ** p<0.05, * p < 0.1

With regard to dropout rates in upper secondary education (Table 4), we observe that up to model 4, boys, students of immigrant origin and students with socio-economic support needs are more likely to drop out than girls, native students and non-NESE students. However, once we add grades, the relationship is reversed and is no longer significant, except for boys, who are 1% less likely to drop out than girls with the same grades. Grades appear to be the most important factor among those we have introduced, as they explain 23.7% of dropouts.

Table 5

Probability of dropping out of CFGM or upper secondary education by grades, gender and migration background

		Dropout from CFGM			
		Male		**Female**	
Variables		**Native**	**Immigrant**	**Native**	**Immigrant**
Fail		22.9	21.7	22.9	21.7
	N	154	32	67	19
Approved		23.6	22.4	23.6	22.4
	N	511	125	265	70
Good		19.2	18.2	19.2	18.2
	N	127	30	139	42

Notable		18.8	16.8	17.8	16.8
	N	10	2	24	3
Excellent		NA	NA	NA	NA
		High school dropout rate			
		Male		**Female**	
Variables		**Native**	**Immigrant**	**Native**	**Immigrant**
Fail		43.7	43.1	45.6	45.02
	N	20	9	22	13
Approved		48.9	48.3	50.9	50.3
	N	481	147	147	143
Good		23.9	23.5	25.3	24.9
	N	595	103	621	140
Notable		4.48	4.38	4.83	4.72
	N	137	25	230	48
Excellent		1.12	1.09	1.21	1.18
	N	3	0	16	1

Note: Probabilities are expressed as percentages.

Table 5 shows the probabilities of dropping out of intermediate vocational training or upper secondary education according to the intersection between gender, native or immigrant students, and the average mark obtained in compulsory secondary education. The results show that in vocational training there is practically no difference in the probability of dropping out between a native male and an immigrant male with the same mark. Nor is there any difference between native and immigrant women with the same grade. Nor is there any difference between men and women with the same migratory origin and the same average performance in secondary education.

In the case of upper secondary education, there are also no differences between native and immigrant males in terms of grades, nor between native and immigrant females. There is a slight difference of 1% in the probability of dropout between immigrant females and immigrant males, regardless of grades.

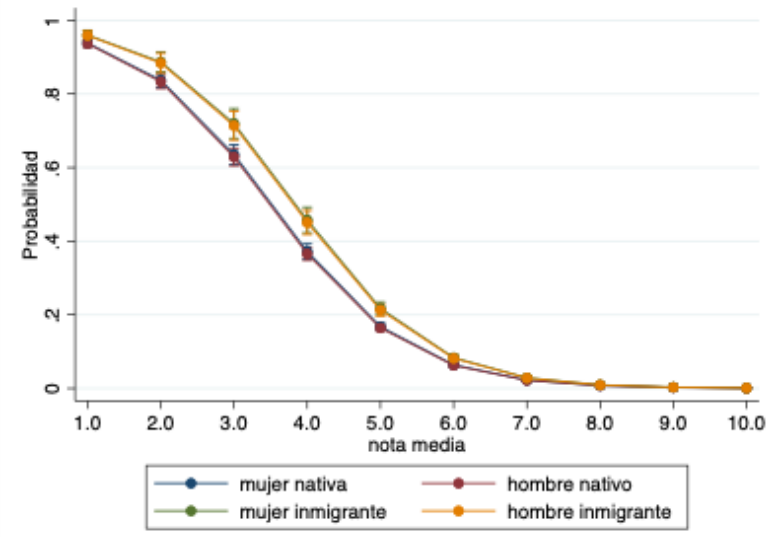
There is also a higher probability of dropping out of upper secondary education based on grades obtained in lower secondary education than in intermediate vocational training. Thus, grades obtained in lower secondary education seem to have a greater impact on continuity in upper secondary education than in intermediate vocational training.

Finally, it should be noted that among both young people enrolled in vocational training and those enrolled in upper secondary education, there is a small percentage of young people whose ESO grades were below 5. This illustrates the heterogeneity of access

profiles. In CFGM, the percentage of young people with a grade below 5 is 16%, which can be explained by the flexibility of the access routes: from entrance exams and courses, graduates from adult education centres, or those who enter from a basic vocational training programme (FPI in Catalonia). In the case of upper secondary education, the percentage is 0.7% and could also be due to some ESO graduates being conditioned towards intermediate vocational training cycles, which are not always followed by students and families, or to graduates obtaining their qualifications after completing ESO, for example, in adult education centres.

Figure 1

Probability of leaving school after ESO by average grade, gender and migratory origin

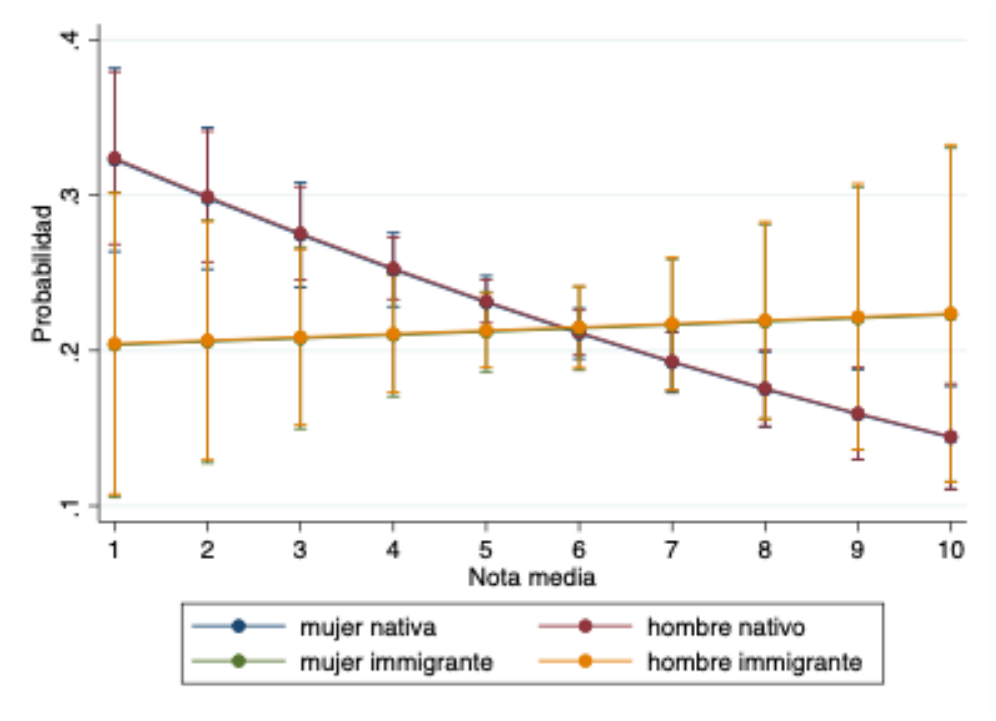


Note: Result of the interaction between average grade and migratory origin.

Figure 1 illustrates the interaction between migratory origin and the grade obtained in secondary education and shows the results obtained by gender for secondary education students. Although the interaction is not significant, the figure shows that, at certain points, the confidence intervals between native and immigrant individuals do not overlap in some categories (grades between 2 and 5). These results suggest that when grades are below 6, the probability of dropping out after compulsory education among the immigrant population is slightly higher than among the native population. However, the probabilities are equal when the average grade is 6 or higher.

Figure 2

Probability of leaving CFGM by average mark, gender and migratory origin.

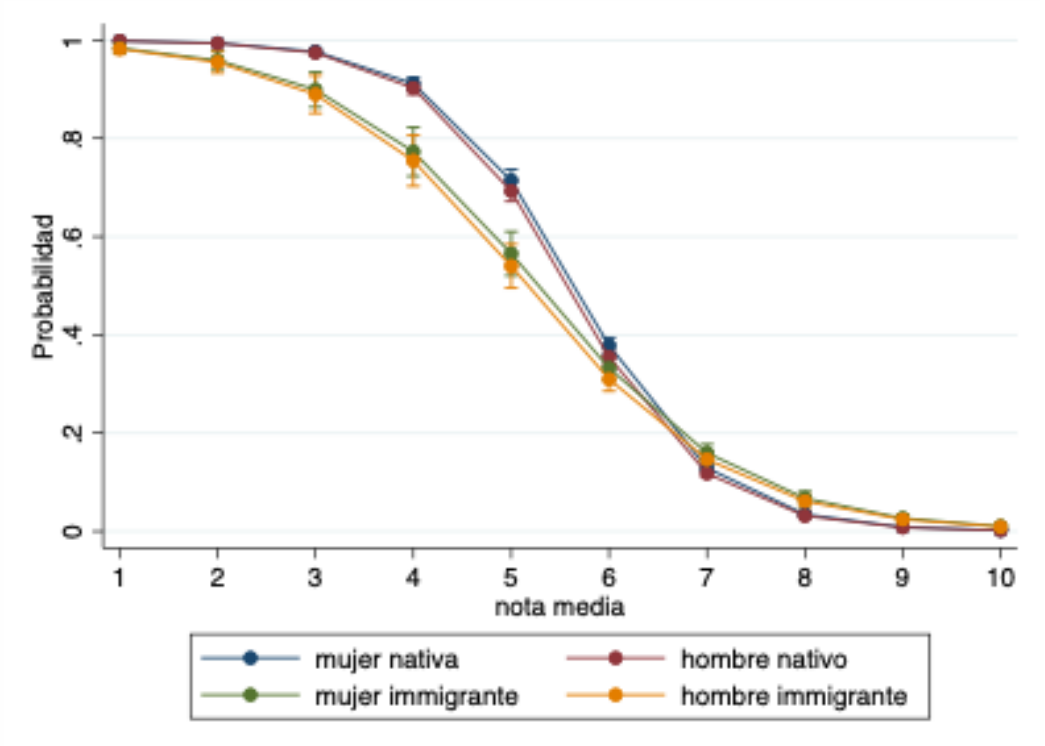


Note: Result of the interaction between average grade and migration background.

Figure 2 illustrates the interaction between migration background and ESO grades and shows the results obtained by gender for CFGM students. The interaction is only significant at 10%. As can be seen, there is a different trend between immigrants and native-born individuals. Young people of immigrant origin who are enrolled in intermediate vocational training show a probability of dropping out that is more invariant to the grades they obtained in compulsory education, while the native population shows a probability of dropping out that is conditioned by the f grades. Thus, with low grades, the native population is more likely to drop out than young immigrants, but this gap is reversed from an average grade of six, reducing the probability of dropout among the native population. This is not the case for young people of immigrant origin, who maintain a similar probability of dropping out of education, even with high grades (good and excellent), at a higher percentage than the native population. No differences are observed by gender.

Figure 3

Probability of leaving secondary education by average grade, gender and migrant origin.



Note: Result of the interaction between average grade and migration background.

With regard to upper secondary education (Figure 3), once again the native population is more likely to drop out than the immigrant population. However, this probability is equalised at higher grades (from a grade of six upwards). Unlike dropout rates in intermediate vocational training, the grades obtained by students in compulsory secondary education have a similar impact on the tendency to reduce the probability of dropout among native and immigrant students. Furthermore, the trend is similar across genders. The interaction is also significant at 1%. In this sense, immigrants tend to have a higher probability of continuing in upper secondary education with the same grades. Native students catch up in probability when they reach a "good-to-very good" grade.

Discussion

The results obtained have allowed for a more in-depth analysis of educational dropouts at the end of compulsory secondary education, intermediate vocational training

and upper secondary education from an intersectional perspective. At a descriptive level, the data show a higher probability of dropout among males, immigrant students, NESE students, those enrolled in highly complex schools, and those with lower grades. However, the regression analysis provides relevant information regarding the weight of these variables. The results do not allow hypothesis 1 to be confirmed in its entirety, as gender differences disappear when controlled for the average grade obtained in ESO. The average grade has a predictive capacity for dropout in the three educational stages analysed, although with a lower incidence in vocational training dropout and a higher incidence in dropout after ESO and in upper secondary education. Dropout at the end of secondary education is mainly explained by the socio-economic status of the students (NESE), followed by grades, immigrant origin and being enrolled in a highly complex school. Controlling for grades, the weight of these variables is significantly reduced, although it does not disappear, and there may be an interaction effect between primary and secondary effects in accordance with the findings of Bernardi and Cebolla (2014).

In vocational training cycles and upper secondary education, no differences in dropout rates by gender or migrant origin are observed for students with the same grades (hypothesis 2), which could be explained by the effect of overselection of the migrant population, particularly in upper secondary education. These results are consistent with previous findings (Dollmann, 2017), which show an advantageous transition behaviour for immigrants after compulsory secondary education when previous academic performance is controlled for. In addition, immigrant girls seem to achieve similar transitions to immigrant boys, indicating that there is no additional (dis)advantage for immigrant girls.

In intermediate vocational training cycles, socio-economic status (NESE) and the average mark obtained in secondary education slightly increase the probability of dropping out. With equal grades, the risk is reduced by only 0.3%. This could be interpreted as a consequence of a higher probability of dropout among economically vulnerable young people, regardless of their secondary school grades, which would require, among other things, socio-economic compensation measures such as scholarships, grants and transport assistance. It remains to be explored whether performance in CFGMs is also a predictor of dropout, although the lack of data has not allowed for this analysis. The reasons for dropout related to the mismatch between preferences (vocational training specialisation) and what students actually end up studying could also explain the lower incidence of previous results (grades) on dropout at this stage of education.

The analysis of the interaction in dropout rates after compulsory secondary education (hypothesis 3) shows that low grades have a disproportionate effect depending on origin, migrant or native, putting the educational continuity of the immigrant population at risk when grades are below six. Unlike other studies (Sánchez-Gelabert et al., 2024), our results do not allow us to conclude that immigrant girls are more likely to interrupt their education after compulsory schooling than immigrant boys when grades

are average or high. Furthermore, the probability of dropping out among the native and immigrant populations is equal when the average ESO grade is 6 or higher, which means that successfully completing this stage seems to have a greater impact on their educational continuity trajectories, as other studies also point out (Carrasco et al., 2018). In this sense, improving the educational performance of students of immigrant origin can have an equalising effect and prevent dropout after secondary education.

With regard to hypothesis 4, a compensatory effect was noted among native boys with low grades, who were more likely to continue their education than immigrant boys with low grades. The results do not corroborate this hypothesis, as native students are more likely than non-native students to drop out of vocational training. However, for those native students who obtained an average grade of 6 or higher in compulsory education, the probability of dropping out of vocational training is significantly reduced, falling below the probability of dropout among students of immigrant origin.

For young immigrants, dropping out of vocational training does not depend on their previous grades, which could be explained both by the migrant optimism effect (Cebolla and Martínez, 2015) and by other factors that explain their continuity in vocational training: a higher opportunity cost if they drop out or higher expectations of return, as they are over-selected, as students of immigrant origin are underrepresented in post-compulsory education, including in CFGM programmes (Merino et al., 2020).

The data also do not corroborate hypothesis 5, which suggested that the probability of continuing in CFGM and upper secondary education among the immigrant population would depend more on (high) grades than among the native student population (grade effect). The results show the opposite, namely that immigrants are more likely to continue in upper secondary education when they have obtained the same grades in lower secondary education. The effect of grades increases the probability of continuing in upper secondary education among the native population from a grade of 6 onwards, at which point the probabilities of remaining in education among the native and immigrant populations are equal. No differences are observed by gender.

One of the strengths of the study lies in working with data from the records of all students enrolled in the non-university education system in Catalonia, although, as already noted, one limitation is that the average grade obtained in secondary education is not available for the cohort analysed and educated in private subsidised schools ( ). It would also be advisable to incorporate the grades obtained in the first year of secondary education into the analysis, although this is not provided for in the official register. Other limitations of the analysis include the lack of register information on the educational level of the family and the occupation of the parents, as well as data that would allow the immigrant origin of the parents to be identified in order to identify the generation of immigration of the students. The results obtained for the cohort born in 2001 show that the composition of secondary education is strongly influenced by recent migration. The results are significant for the first-generation immigrant population (arriving in Catalonia

after the age of 7 or before the age of 7 (generation 1.75 (Bayona-i-Carrasco et al., 2020), as the second generation of immigrants was still in nursery and primary education. It would be interesting to analyse whether the trends observed change for second-generation immigrants, although the data in the register do not allow them to be identified. In short, the results show the importance of analysing educational dropouts in a differentiated and intersectional way, as there is an unequal incidence of social inequalities and educational performance at different stages: a higher incidence of social inequalities in dropouts at the end of compulsory secondary education, which highlights the need to increase the educational performance of the most socially vulnerable students and improve their opportunities for continuing education. They also illustrate the need to continue advancing our knowledge of the reasons for dropping out of intermediate vocational training and upper secondary education, where the weight of previous educational performance seems to have less explanatory power. Identifying these reasons would help to define the policies needed to reduce them.

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Date received: 15 November 2024
Review date: 25 November 2024
Date of acceptance: 14 October 2025

Appendix

Table A1

Logistic regression models with the interaction between average grade (non-standardised) and migratory origin by studies

Variables	ESO	CFGM	Baccalaureate
Male			
(Ref. Female)	-0.034	0.012	-0.102**
	(0.045)	(0.058)	(0.043)
Immigrant			
(Ref. Immigrant)	0.491	-0.752*	-2.916***
	(0.232)	(0.402)	(0.418)
NESE social			
(Ref. No NESE)	0.843	0.270	-0.196
	(0.068)	(0.096)	(0.130)
Complex Centre			
(Ref. Non-complex)	0.277	0.058	0.391
	(0.053)	(0.071)	(0.058)
Average score	-1.089***	-0.116	-1.418
	(0.019)	(0.029)	(0.030)
Average			
score*Immigrant	0.033	0.128	0.452
	(0.044)	(0.129)	(0.066)
Constant	3.751***	-0.665***	7.966
	(0.109)	(0.166)	(0.200)
N	37,128	7,334	19,996
R2	0.3639	0.0033	0.2247