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DECODING INEQUALITY IN EDUCATIONAL EXPECTATIONS: EXAMINING DECISIONAL MECHANISMS AND SOCIAL ORIGIN

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Abstract

This study aims to examine the formation of educational expectations and the underlying mechanisms that mediate the secondary effects of social origin. The research addresses the question of why students with similar academic performance but different social backgrounds hold different expectations about their educational future. The conceptualization of expectations as realistic aspirations provides a framework for understanding the state of the educational decisionmaking process. The study draws on two prominent theoretical approaches, Rational Action Theory and Cultural Capital Theory, to explain social differentials in educational decisions. Using data from the Programme for the International Study Assessment (PISA), specifically focusing on the Spanish educational system, the study explores vertical (whether to enter an educational level) and horizontal expectations (what to do within a level of education) regarding Upper Secondary and Tertiary Education. The PISA dataset offers comprehensive information on participants' educational and occupational expectations, allowing for the analysis of numerous mechanisms. The findings reveal that Cultural Capital mechanisms, such as highbrow-culture participation, educational resource endowment, and reading habits, significantly contribute to explaining secondary effects. Rational Action mechanisms, including the aversion to social demotion, fear of failure, economic concerns, and information acquisition, also play a role in generating secondary effects, albeit to a lesser extent. However, despite considering these mechanisms, approximately twothirds of the observed inequality in expectations remains unexplained. Furthermore, the study highlights that certain mechanisms perform differently in vertical and horizontal expectations. The relative risk aversion mechanism, the number of information sources accessed, educational resources at home, and reading habits exhibit varying impacts in different types of expectations. In conclusion, this research sheds light on the formation of educational expectations and the mediating mechanisms contributing to inequality. By considering both Rational Action Theory and Cultural Capital Theory, the study provides valuable insights into the complex processes underlying educational decision-making. The discussion section reflects on the results and acknowledges the limitations of the study. Overall, this research

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contributes to a deeper understanding of educational expectations and informs efforts to address educational inequalities.

Introduction

Research on the formation of educational expectations has a long tradition in sociology. Different studies have documented substantial inequalities by social origin in the formation of educational expectations (Bodovski et al., 2014; Buchmann and Park, 2009; Li and Xie, 2020), which later translate into inequalities in educational and occupational attainment (Beal and Crockett, 2010; Lee et al., 2012; Sewell et al., 1969, 1970).[1] Some scholars have studied that inequality in expectations by distinguishing between primary and secondary effects of social origin (Neugebauer et al., 2013; Parker et al., 2016; Vald´es, 2020; Zimmermann, 2020). In short, primary effects refer to the indirect effect of social origin on expectations via academic performance, while secondary effects refer to genuine decision-based inequalities (Boudon, 1974). This work intends to contribute to the best understanding of inequality in educational expectations by testing specific mechanisms that mediate the secondary effects of social origin. Put simply, I examine why two students with the same academic performance but from different social origins hold different expectations about their educational future.

To that end, I conceptualized expectations as realistic aspirations – sometimes referred to as anticipated decisions (Golz and ¨ Wohlkinger, 2019; Roth, 2017; Salikutluk, 2016) –, indicative of the state of the educational decisionmaking process when students are questioned about their educational future. As such, the theoretical literature developed for the educational decision-making process can be applied to the study of inequality in educational expectations. In particular, I rely on the two most popular theoretical approaches for the explanation of social differentials in educational decisions: Rational Action Theory and Cultural Capital Theory (Golz and Wohlkinger, 2019¨ ; Puzi´c et al., 2019; van de Werfhorst and Hofstede, 2007; Zimmermann, 2020). Furthermore, this paper expands previous research by studying vertical (whether to enter an educational level) and horizontal expectations (what to do inside that level of education) about two different educational levels (Upper Secondary and Tertiary Education).

The data comes from the Programme for the International Study Assessment (PISA). The study collects abundant information about the educational and occupational expectations of participants, allowing the operationalization of a large number of mechanisms. Despite the large number of countries that participate in PISA, I focus on the Spanish case, a comprehensive educational system where students are assessed right before the transition into Upper Secondary Education.

Results indicate that Cultural Capital mechanisms (highbrow-culture participation, the endowment of educational resources, and reading habits) explain a substantial part of secondary effects after accounting for several Rational Action mechanisms (the aversion to social demotion, the fear of failure, economic concerns, and the acquisition of information). Although most of these mechanisms play a non-neglectable part in the generation of secondary effects in all expectations considered (fear of failure and economic concerns play a residual role), two-thirds of that inequality remain unexplained. Also, I report that the relative risk aversion mechanism, the number of sources of information accessed, the educational resources at home, and reading habits perform differently in vertical and horizontal expectations. In the final section of this paper, I discuss the results and comment on the main limitations of my work.

1. Theoretical framework of the study

1.1. Primary and secondary effects of social origin

Most of the current research on social differentials in the educational decision-making process is based on the seminal contributions of Raymond Boudon and the distinction between primary and secondary effects of social origin. Boudon (1974) argued that the social origin of the student conditions academic performance, which, in turn, affects educational expectations and decisions. The author labelled this performance-based inequality in the educational decision-making process as primary effects. However, two students with the same academic performance but from different social origins do not hold the same educational expectations nor make the same

educational decisions. Boudon (1974) contended that the main factor conditioning educational decisions was the desire to avoid downward mobility and, while upper-class students are highly dependent on academic success to fulfil that goal, lower-class students are not. As a result, upper-class students are more ambitious than lower-class students at the same level of performance. Boudon labelled this decision-based inequality as the secondary effects of social origin.

Therefore, even if we control for academic performance, we still observe that social origin affects educational expectations, but we do not know the reasons for that. Following previous research, I rely on Rational Action and Cultural Capital theories to identify mechanisms that might mediate those secondary effects of social origin (Golz and Wohlkinger, 2019¨ ; Puzi´c et al., 2019; van de Werfhorst and Hofstede, 2007; Zimmermann, 2020).

1.2. Rational Action Theory

Rational Action Theory is based on the premise that the ultimate causes of all social phenomena are the result of the rational decisions of individual actors, who gather information and weigh benefits and costs before taking a specific course of action. Breen and Goldthorpe (1997) built on Boudon's argumentation and elaborated the Relative Risk Aversion Theory (RRA). For them, students make decisions considering benefits, costs, and the anticipated probability of success in every educational alternative. By means of those decisions, students intend to fulfil a twofold goal. In the short term, they try to avoid academic failure and choose alternatives with a high enough probability of success. In the long term, they try to avoid downward social mobility and choose educational alternatives that lead to occupations at least as prestigious as those of their parents. Breen and Goldthorpe (1997) argued that all students are equally spurred by the desire to avoid social demotion but, as not every student is equally exposed to that risk, those in higher social positions are more impelled to choose demanding educational alternatives where, nonetheless, the risk of failure is higher. At the same time, this risk of failure will restrain disadvantaged students from pursuing education beyond that point where their social position is already secured. Ultimately, we observe different expectations at the same level of performance, that is, secondary effects of social origin.

Several studies have used indirect methods to test the RRA mechanism (Daniel and Watermann, 2018; Jæger and Holm, 2012; van de Werfhorst and Andersen, 2005). Others have asked students directly about their desire to maintain their social position, sometimes finding homogeneity across social classes (Jakob and Combet, 2020; Puzi´c et al., 2019; van de Werfhorst and Hofstede, 2007) and sometimes heterogeneity (Gabay-Egozi et al., 2010; Stocke, 2007a´ ; Zimmermann, 2020). Regarding its contribution to the secondary effects of social origin, Barone et al. (2018) argued that since the desire for status maintenance is supposed not to vary by social class, such indicator should not mediate the effect of social origin net of academic performance. Instead, they questioned students how dissatisfied they would be if they ended up in middle-class jobs where no university qualification was required. If RRA were at play, as it was the case in their study, upper-class students would be more dissatisfied with such destinations than lower-class students because, for them, they entail social demotion. Similarly, Zimmerman (2020) and Stocke (2007a) ´ also employed measures of the RRA mechanism that are expected to vary by social class to examine secondary effects.

A number of studies have also documented the effect of the anticipated probability of success on the formation of educational expectations (Golz and Wohlkinger, 2019¨ ; Karlson, 2019). On the one hand, that mechanism should vehiculate the action of primary effects: upper-class students perform better at schools, anticipate a higher probability of success and, as a result, hold more ambitious educational expectations. However, lower-class students might take more seriously the risk of failure than upper-class students at the same level of performance (Barone et al., 2018; Becker and Hecken, 2009). If so, they should exhibit higher concerns about the possibility of failing after controlling for academic performance and, if fearing failure is associated with less ambitious expectations, such fear will mediate the secondary effects of social origin.

Other works have studied how costs affect the educational decisions and expectations of students (Barone et al., 2018; Becker and Hecken, 2009; Jakob and Combet, 2020; Stock´e, 2007a). For instance, Jakob and Combet (2020) analysed the expectation of university enrolment in El Salvador and observed that more than half of the

effect of social origin was accounted for the concerns about economic costs. In turn, costs are irrelevant for parent's decision-making about the transition into Lower Secondary Education in Germany according to Stocke (2007a)´ . Overall, educational costs would be more relevant for expectations about later transitions and in countries with higher economic inequality. As socioeconomically disadvantaged students have fewer resources to assume the costs of education, the concern with such costs might explain why students with the same academic performance but from different social origins hold distinct educational expectations.

Finally, informational barriers play a key role in Rational Action Theory. Students are supposed to update their beliefs about the education process with the information they gather along the way (Breen, 1999). This accumulation of information allows students to hold more forward-looking educational expectations at each level of performance (Holm and Breen, 2016). However, information is not equally distributed among social classes (Barone et al., 2017; Bernardi and Cebolla, 2014; Forster and van de Werfhorst, 2020). Therefore, the quantity and quality of the information about the educational system and the labour market might explain inequality at each level of performance (i.e. secondary effects).

1.3. Cultural Capital Theory

Contrastingly, Bourdieu (1973) argued that the educational system contributes to the reproduction of the structure of symbolic and material relationships (social reproduction) by facilitating the reproduction of the structure of cultural capital (cultural reproduction). To accomplish that, the educational system is constituted as a field, a sphere for action regulated by specific norms where it is required familiarity with the dominant culture that regulates the field (cultural capital) and a system of dispositions (habitus) to develop successful strategies (Bourdieu and Passeron, 1970). This offers a decisive advantage to upper-class students, who have a higher endowment of cultural capital to initiate the cumulative process of institutionalization of their own cultural capital and their habitus prepares them better to make the most of a given amount of cultural capital.

However, there is no agreement on what cultural capital is or how it is transformed into an educational advantage. On the one hand, DiMaggio (1982) initiated a line of empirical work about cultural capital building on the Weberian notion of status culture, where cultural capital is identified with practices, tastes, and styles characteristic of the highbrow culture such as the participation in activities related to art, classical music, theatre, or literature. This cultural capital works as a cultural marker that teachers misconceive as educational brilliance, who, in turn, promote the academic performance and educational ambition of students that exhibit the dominant cultural dispositions. Consistently with that argument, different studies have found an association between cultural participation and academic achievement (Dumais, 2002; Scherger and Savage, 2010) and research on teachers' bias shows that the expectations and recommendations of teachers are not entirely based on students' prior results, cognitive ability and attainment motivation (de Boer et al., 2010; Timmermans et al., 2018). However, the argument that teachers misconceive cultural capital as academic brilliance and favour those cultural dispositions is more controversial, with studies both supporting and disproving that mechanism (Jæger and Møllegaard, 2017; Leopold and Shavit, 2013; Mikus et al., 2019; Wildhagen, 2009).

On the other hand, a different line of empirical work builds on the concept of cultural capital as a toolkit of cultural resources, cognitive skills, and informal know-how that directly increase academic performance (Boone and Van Houtte, 2013; Farkas et al., 1990; Forster and van de Werfhorst, 2020; Sullivan, 2001). As reasoned by Swidler (1986, p. 275), "one can hardly pursue success in a world where the accepted skills, style, and informal know-how are unfamiliar. One does better to look for a line of action for which one already has the cultural equipment". These skills and resources common in the dominant class are of value at schools because the parameters of excellence in the educational field are defined according to the dominant-class's culture (Bourdieu and Passeron, 1970). In particular, many different works have employed reading habits as a proxy for this cultural capital that directly enhances academic performance at schools (Breinholt and Jæger, 2020; De Graaf and De Graaf, 2002; Sullivan, 2001).

Arguably, both forms of cultural capital will contribute to inequality in educational expectations via primary effects (van de Werfhorst and Hofstede, 2007). Students with a higher endowment of cultural capital perform better at

schools, and those who perform better hold more ambitious expectations. However, it might be argued that counting with cultural capital contributes to inequality also via secondary effects. Regarding cultural capital as a signal, teachers might encourage the educational ambition of equally-achieving students only if they exhibit the cultural signs of the dominant class. Concerning cultural capital as a toolkit of resources and skill-generating habits, it might naturalize academic life and lead to the acceptance of the hegemonic goals in the educational system, hence affecting expectations at each level of performance and mediating secondary effects.

1.4. The current study

In brief, this work intends to examine whether the effect of social origin on educational expectations net of academic performance (i.e. secondary effects) is at least partially explained by the aversion to social demotion, the fear of failure, the concern with the economic costs of education, the acquisition of information, the participation in the highbrow culture, the endowment of educational resources, and/or the development of reading habits. This means to assume that students from a higher socioeconomic status will hold higher educational expectations than their counterparts from lower social origins (Buchmann and Dalton, 2002; Buchmann and Park, 2009; Jerrim, 2014), and that only part of that inequality will be due to the underlying differences in performance (Parker et al., 2016). So I will first assess the total effect of social origin and the relative importance of primary and secondary effects.

Then, I examine the mediation of secondary effects. Some works have already provided evidence that mechanisms from Rational Action and Cultural Theory can jointly explain the secondary effects of social origin on educational expectations (Golz and Wohlkinger, ¨ 2019; Puzi´c et al., 2019). However, van de Werfhorst and Hofstede (2007) observed that Cultural Capital mechanisms were more indicated for the analysis of primary effects, while Rational Action mechanisms served better for the explanation of secondary effects.

Furthermore, van de Werfhorst et al. (2003) suggested that mechanisms from Cultural Reproduction theory might be more useful in vertical decisions, while Rational Action theory would be more productive in the analysis of horizontal decisions. Thus, I distinguish between vertical expectations (whether to enter an educational level) and horizontal expectations (what to do inside that level) about Upper Secondary and Tertiary Education, and study whether the formerly described mechanisms perform differently in both types of expectations. **2. Data & sample**

I use data from the 2018 wave of the Programme for the International Student Assessment (PISA) carried out by the Organization of Economic Cooperation and Development (OECD). PISA assesses the literacy in maths, reading, and science of 15-year-old students in countries all around the world. However, this paper focuses on the Spanish case, a comprehensive educational system where students participate in PISA right before the transition into Upper Secondary Education. In Spain, compulsory education is divided into two levels (Primary Education and Lower Secondary Education) and extends up to 16 years of age. Upon completion, students enrol in a stratified Upper Secondary level. The academic track consists of a two-year preparatory program for university education (Baccalaureate), while the vocational track consists of a two-year program aimed at acquiring professional skills (Middle Vocational Education). Students who finish Baccalaureate can sit the access examination for university education or directly enrol in Higher Vocational Education at tertiary level. In turn, graduates in Middle Vocational Education are only allowed to continue in Higher Vocational Education, although students who complete Higher Vocational Education can make the transition into university education (Fig. 1).

Regarding the selection of participants in PISA, all countries are given a set of rules for the design of their national samples. Nevertheless, they are allowed to satisfy internal needs by expanding on these requirements. In Spain, it has been considered convenient to obtain information representative at the regional level and the final sample is the largest among all countries in the study (N = 35,926). Other than that, the construction of the sample follows the same stages in all countries. First, a sample of schools is selected in each region. Second, a sample of 15-year-old students is chosen inside each school. To account for the complex sampling design of PISA, I ponder the results by the final weights of the student (Jerrim et al., 2017) and cluster standard errors at school level (Abadie et al., 2017).

Furthermore, some of the variables employed in this study present a significant proportion of missing information. Comparisons of missing and complete cases revealed significant differences in PISA scores, number of repetitions, sex, and migrant background. To handle that situation, I resort to Multiple Imputation by Chained Equations (MICE), a stochastic iterative imputation method where instead of producing a single imputed value for each missing case, the distribution of the observed data is employed to estimate multiple values that reflect the uncertainty about the true missing value (von Hippel, 2009; White et al., 2011). I have produced sixty-five imputed datasets and replicated the analysis for each of them. Then, I combine the results according to Rubin's rules so standard errors reflect the uncertainty due to the imputation procedure (Rubin, 1987). For more information about missing values and Multiple Imputation, consult Appendix A.

3. Variables

3.1. Educational expectations

Participants in PISA answered separately about their expectation of enrolment in each post-compulsory alternative. Thus, I can build the following four binary variables:

- Vertical expectation of enrolment in Upper Secondary Education (USE). Takes value 1 if any postcompulsory alternative is checked and 0 otherwise. This variable is defined for the whole sample.

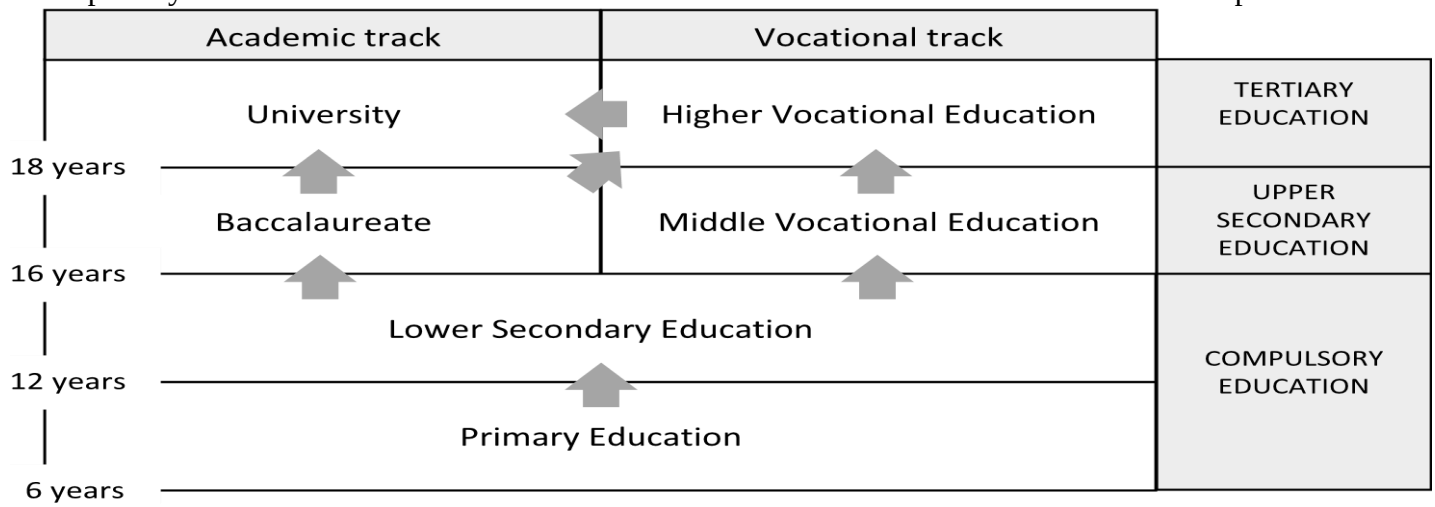


Fig. 1. Structure of the Spanish educational system.

- Horizontal expectation of enrolment in Baccalaureate instead of Middle Vocational Education. Takes value 1 if Baccalaureate is checked and 0 if Middle Vocational Education is checked. If both alternatives are checked, I consider that pattern as uncertainty and the case is dropped. This variable is only defined for those who expect to enrol in USE.
- Vertical expectation of enrolment in Tertiary Education (TE). Takes value 1 if university or Higher Vocational Education are checked, and 0 otherwise. This variable is defined for the whole sample.
- Horizontal expectation of enrolment in university instead of Higher Vocational Education. Takes value 1 if university is checked and 0 if Higher Vocational Education is checked. If both alternatives are checked, I consider that pattern as uncertainty and the case is dropped. This variable is only defined for those who expect to enrol in TE.

As reported in Table 1, 93.2% of Spanish students expect to enrol in Upper Secondary Education and 76.6% of them prefer Baccalaureate over Middle Vocational Education, while 78.3% expect to enrol in Tertiary Education and 71.1% of them prefer university to Higher Vocational Education. 3.2. Social origin

I define the social class of the student using the highest occupation of both progenitors. I employ the three-class version of the EGP class scheme and distinguish between the salariat class (class I + II), the intermediate class (class IIIa, IVabc, V), and the working class (class IIIb, VI, VIIab) (Erikson and Goldthorpe, 1992). However, for

reasons that will be clear right away, I will compare salariat and non-salariat-class students. 3.3. Performance-related variables

To establish the portion of the total effect of social origin that operates via primary effects, I employ the following performance- related indicators.

Academic ability. Students are assessed in PISA in the domains of reading, maths, and science. To do so, the OECD resorts to the Item Response Theory and participants only answer a subset of questions in each questionnaire. Then, 10 plausible values are extracted from a posterior distribution of a latent variable of achievement in each domain. Following the OECD recommendations, I replicate the analysis for each plausible value and then pool the results (OECD, 2009). Unfortunately, Spanish results in reading were considered unreliable by the OECD. Therefore, I only employ scores in maths and science. Furthermore, to avoid problems of collinearity, I average each pair of plausible values in maths and science to obtain ten measures of academic ability.

Number of grade repetitions. Regrettably, the OECD does not collect any information about scholar grades. Therefore, I complement

Table 1 Descriptive information about educational expectations.

	Obs	Percentage
Vertical expectation - Upper Secondary Education	35,097	93.2%
Horizontal expectation - Upper Secondary Education	30,407	78.3%
Vertical expectation - Tertiary Education	35,097	76.6%
Horizontal expectation - Tertiary Education	23,466	71.1%

PISA scores with the number of grade repetitions underwent by the student. As grade repetition is relatively frequent in Spain (Ikeda and García, 2014) and a direct consequence of poor grades (Choi et al., 2018), it is a useful academic complement for PISA scores.

Educational position. Furthermore, several works have shown that ability grouping exerts an important effect on student's expectations after controlling for academic performance (Karlson, 2015; Smyth, 2020). In Spain, most of the student body attends a generally-oriented curriculum during compulsory education. However, a small proportion of low-achieving students is diverted into pre-vocational programmes. Therefore, I include an indicator that captures whether the student is enrolled in such programmes.

3.4. Rational action mechanisms

Social maintenance concerns. Participants in PISA declared how important it was for them the social status, the employment opportunities, and the salary when choosing their expected occupation. Students answered on a scale from 1 to 4 to each item. I have created a summary index by summing up the responses and dividing the result by the number of valid responses (α-Cronbach = 0.707).

Relative Risk Aversion (RRA). Barone et al. (2018) measured the RRA mechanism by questioning students how much they would dislike the possibility of ending up in a middle-class occupation. Unfortunately, PISA did not include any similar question. In turn, the OECD asked about the expected occupation at the age of 30 and measured it using the International Socioeconomic Index of occupational status (ISEI). I have built an index of relative risk aversion to social demotion taking as the reference point typical intermediate-class occupations for which it is not necessary to complete university education (travel consultant, gym manager, police officer, chef, or bookkeeper). Those occupations have an ISEI score of around 50. Therefore, if the ISEI score of the occupational expectation is below 50, it means that the student would agree with the idea of ending up in a middle-class occupation and the indicator is 0. For the rest of the sample, I compute the difference between the ISEI score of the occupation expected and that reference point of 50. As this indicator only expresses aversion to social demotion for salariat-class students, I compare them with the rest of the sample.

Fear of failure. Participants in PISA were not directly asked about their perceived probability of success in each post-compulsory alternative. In turn, they were questioned about their agreement with the following statement: "When I am failing, this makes me doubt my plans for the future". Students responded on a scale from 1 to 4.
Economic concerns. Again, participants in PISA were not asked about how burdensome would be for them the costs of the different educational alternatives. However, the OCED asked students how important it was for them the existence of economic support for the realization of their occupational expectation, and they answered on a scale from 1 to 4.
Amount of information. Students were questioned whether they have obtained information about future education and occupations from nine different channels. To measure how informed the student is, I have counted the number of different sources of information accessed (α-Cronbach = 0.697). 3.5. Cultural capital mechanisms
Cultural possessions. PISA 2018 did not include information about practices such as attending museums, theatres, or concerts. In turn, the OECD collected data about cultural possessions at home. These possessions are not directly related to performance at school, but they signal cultural participation. I have built an index summing up how many cultural possessions were ticked (α-Cronbach = 0.662).
Educational resources. Participants in PISA were also questioned about the educational resources available at home. I have elaborated an index about educational resources summing up how many of them were ticked (αCronbach = 0.408).
Reading habits. Students answered separately how often during the year they read magazines, comic books, fiction books, non- fiction books, and newspapers. A summary index has been computed from those responses (α-Cronbach = 0.608).
Number of books. In addition to that, I have considered the total number of books at home. As I also include how much the student reads, the number of books captures a dimension that is not related to academic ability but with the participation in a culture where books have a symbolic value regardless of whether they are read or not.
Finally, I control the results by sex (0 – female; 1 – male) and migrant background (0 – immigrant; 1 – native). More information about the elaboration of all these indicators can be found in Appendix B. Table 2 offers descriptive information about them for the three analytic samples employed in the study: the whole sample, the sample of students who expect to enrol in Upper Secondary Education (USE) and the sample of students who expect to enrol in Tertiary Education (TE). Additionally, multicollinearity diagnosis with the variance inflation factor (VIF) for all independent variables yielded VIFs ranging from 1.02 to 1.51, far below the threshold value of 10 and indicating no concern of multicollinearity.

4. Method

It is a common research practice to decompose the effect of social origin on educational decisions and expectations into an indirect effect via academic performance (primary effect) and a direct effect that survives that control (secondary effect). Additionally, some works have assessed the contribution to secondary effects of specific mechanisms (Bachsleitner et al., 2018; Barone et al., 2018; Zimmermann, 2019). To do that, they have employed nested regression models and carry out the following mediation analysis. In a first step, a baseline model is estimated that only includes social origin (O) and controls (Z). In a second step, performance (P) is included, and it is assessed whether (and how much) the coefficient of social origin (β) is reduced. Finally, the vector of mechanisms (M) is included in a third model to assess if β is reduced any further.

$\text{logit}(Y_i)=\alpha+ \beta O_i + \gamma \mathbf{Z}_i + e_i$ (1) $\text{logit}(Y_i)=\alpha+ \beta O_i + \varphi \mathbf{P}_i + \gamma \mathbf{Z}_i + e_i$

$\text{logit}(Y_i)=\alpha+ \beta O_i + \varphi \mathbf{M}_i + \varphi \mathbf{P}_i + \gamma \mathbf{Z}_i + e_i$

However, such comparisons between nested models cannot be directly made in non-linear specifications such as logit or probit. The problem is that, in these non-linear specifications, coefficients are adjusted by the residual variance of each model. When we introduce performance in the second step, for instance, the coefficient of social origin changes for two reasons: the mediation effect of performance and the lesser residual variance in the new model. To address that problem, Karlson, Holm, and Breen developed the so-called KHB method (Karlson et al., 2012; Karlson and Holm, 2011). The procedure uses the residuals of the regression of performance on social origin

to correct for the rescaling of the model and compute the true mediation of academic performance. Therefore, I proceed as follows. First, I adjust model (1) to learn the total effect of social origin on each educational expectation. Second, I adjust model (2), apply the KHB correction, and compute the relative size of primary effects. Third, I set performance-related indicators as controls in model (3) – so inequality equals nonexplained inequality in model (2), i.e. secondary effects – apply again the KHB correction, and compute the percentage of the inequality not explained by performance that operates through each of the formerly described mechanisms. Results are obtained employing the khb command in Stata 15 (Kohler et al., 2011).

5. Results

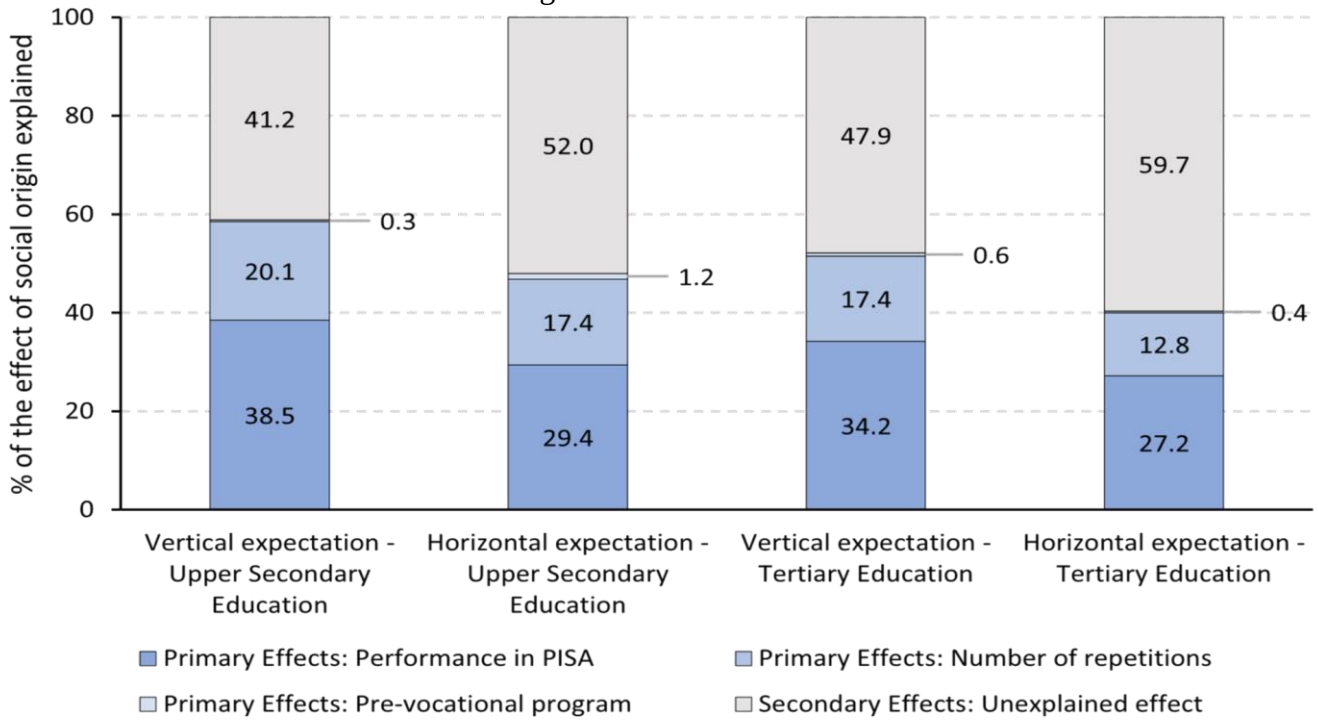
The presentation of the results is structured in two parts, one dedicated to vertical expectations and one devoted to horizontal expectations. Results are summarized in Figs. 2 and 3, while the models in full are reported in Appendix C. **Table 2**

Descriptive information about the sample.

	Whole sample		Expect to enrol in USE		Expect to enrol in TE			
	Mean/%	Std. Dev.	Mean/%	Std. Dev.	Mean/%	Std. Dev.		
Social origin: Salariat class	29.4%	0.5	30.4%	0.5	32.1%	0.5		
Academic ability (PV1)	483.3	83.8	491.3	81.2	499.6	79.3		
Number of repetitions	0.4	0.6	0.3	0.5	0.2	0.5		
Educational position: General curriculum	98.9%	0.1	99.0%	0.1	99.4%	0.1		
Social maintenance concerns	2.9	0.7	2.9	0.7	2.9	0.7		
Dissatisfaction with middle-class occupations (RRA)	19.8	13.4	20.4	13.3	21.5	12.9		
Fear of failure	2.4	1.0	2.4	1.0	2.4	1.0		
Economic concerns	2.7	0.8	2.7	0.8	2.7	0.8		

Number of sources of information	0.4	0.3	0.4	0.2	0.4	0.2
Cultural possessions	0.6	0.3	0.6	0.3	0.6	0.3
Educational resources	0.8	0.2	0.8	0.2	0.8	0.2
Reading habits	2.1	0.8	2.1	0.8	2.2	0.8
Number of books	153.2	194.6	158.0	194.9	166.6	198.0
Sex: Males	49.4%	0.5	50.7%	0.5	51.8%	0.5
Migrant background: Natives	87.9%	0.3	88.5%	0.3	89.4%	0.3

Fig. 2. Mediation of the total effect of social origin b



Note: Results come from models (1) and (2). All models control for sex and migrant background and are weighted using the final weights of the student (W_FSTUWT).

y performance-related indicators.

5.1. Secondary effects of social origin in vertical expectations

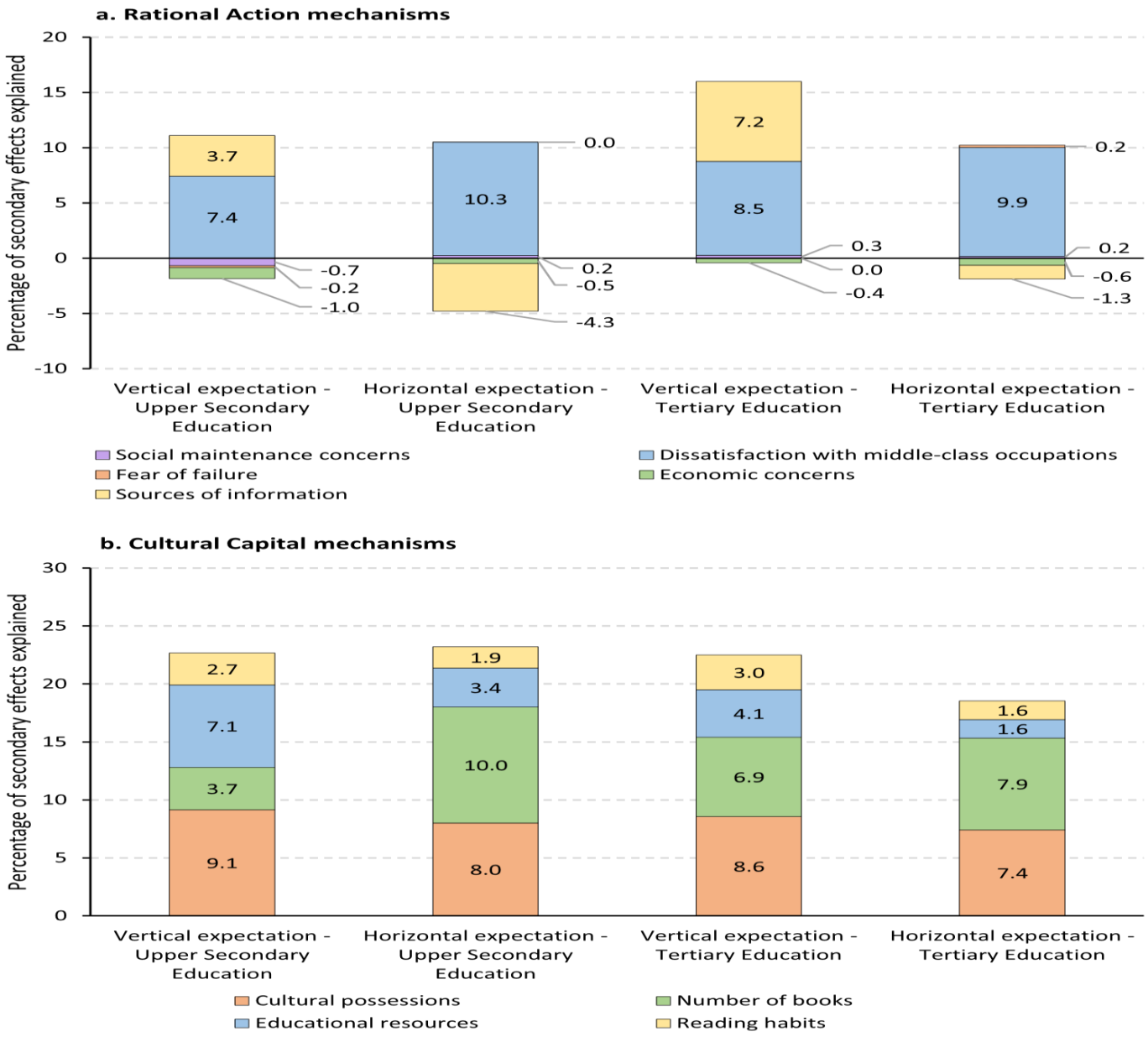
I first analyse the vertical expectations of enrolment in Upper Secondary and Tertiary Education. Tables C1 and C3 in Appendix C report that, after controlling for sex and migrant background, belonging to the salariat class increases the probability to expect to enrol in Upper Secondary Education by 5 percentage points, while the expectation to enrol in Tertiary Education increases by 12.3 points. This is the total effect of social origin in each vertical expectation. In Fig. 2 we see that 58.8% of that total effect of social origin on the vertical expectation of enrolment in Upper Secondary Education and 52.1% of the effect on the expectation of enrolment in Tertiary Education operates via primary effects. The scores in PISA account for the larger part of that mediation, while the educational position barely mediates the effect of social origin. Then, I include all mechanisms described above to assess whether they mediate the unexplained effect of social origin after accounting for performancerelated factors (Fig. 3). These mechanisms account for 31.9% of the secondary effects in the vertical expectation about Upper Secondary Education and 38.1% of the secondary effects in the vertical expectation about Tertiary Education.

In Fig. 3a, I report the results for the mediation of Rational Action mechanisms. First, I document a sizeable mediation of the dissatisfaction with middle-class occupations (RRA), which is slightly larger for the vertical expectation about Tertiary Education (8.5%) than for the vertical expectation about Upper Secondary Education (7.4%). Put simply, salariat-class students are more dissatisfied with the possibility of ending up in a middleclass occupation, and those more dissatisfied with that possibility are more ambitious in their educational expectations. In turn, no mediation is observed for social maintenance concerns. Ancillary analysis showed that this indicator does not vary by social class and, therefore, it cannot mediate the effect of social origin on educational expectations.

Additionally, the number of sources of information accessed proves to be an important mediator of the secondary effects of social origin on vertical expectations. The indicator explains 3.7% of the secondary effects in the vertical expectation about Upper Secondary Education and 7.2% in the vertical expectation about Tertiary Education. Salariat-class students access more sources of information and those who access more sources of information are more ambitious when thinking about the future.

Surprisingly, the fear of failure and the importance acknowledged to financial aid do not mediate the secondary effects of social origin. Ancillary analyses showed that, even though both mechanisms vary by social origin, they do not predict expectations after considering performance and the rest of the mechanisms.

Fig. 3b reports the results for Cultural Capital mechanisms. They explain 22.7% of the secondary effects of social origin in the vertical expectation about Upper Secondary Education and 22.5% in the vertical expectation about Tertiary Education. The most substantial contribution is made by the indicators that capture highbrow-culture participation (cultural possessions and the number of books at home), which explain 12.8% of the secondary effects in the vertical expectation about Upper Secondary Education and 15.4%



Note: Results come from models (2) and (3). All models control for sex and migrant background and are weighted using the final weights of the student (W_FSTUWT).

Fig. 3. Mediation of the secondary effects of social origin by mechanisms from Rational Action and Cultural Capital theories. of the secondary effects in the vertical expectation about Tertiary Education. The educational resources and the

reading habits of the student exert a lower but still significant mediation.

5.2. Secondary effects of social origin in horizontal expectations

Let us turn now to the examination of the horizontal expectation of enrolment in Baccalaureate instead of Middle Vocational Education and the horizontal expectation of enrolment in university instead of Higher Vocational Education. Tables C2 and C4 in Appendix C indicate that the total effect of social origin is substantially larger than before: salariat-class students have a probability to hold both horizontal expectations 16.1 and 18.6 percentage points higher than non-salariat class students. Furthermore, Fig. 2 reports that primary effects account for 48.2% of that effect of social origin on the horizontal expectation about Upper Secondary Education and 40.4% on the horizontal expectation about Tertiary Education. Therefore, the relative size of primary effects is larger in vertical than horizontal expectations, and also in short-term than long-term expectations.

Fig. 3a displays the results for the mediation of Rational Action mechanisms. Again, we observe that social maintenance concerns do not mediate the effect of social origin in horizontal expectations, while the dissatisfaction with middle-class occupations (RRA) shows an even larger mediation than before. The indicator explains around 10% of the secondary effect of social origin on the preference for the academic track both in Upper Secondary and Tertiary Education.

Interestingly, the number of sources of information acts now as a suppressor instead of a mediator. After including the indicator in the model, the effect of social origin enlarges. As a result, the sign of the mediation is negative. Put simply, salariat-class students look for information coming from more different sources, but those who consult more sources of information tend to prefer the vocational track both in Upper Secondary and Tertiary Education. As before, the fear of failure and the importance acknowledged to financial aid do not mediate secondary effects because they do not affect horizontal expectations after considering performance-related factors and the rest of the mechanisms.

Finally, Fig. 3b reports the results for the mediation of Cultural Capital mechanisms. Cultural possessions seem to explain a similar proportion of the secondary effects than before, but the number of books clearly improves its capacity to mediate the secondary effects of social origin. The indicator accounts for 10% of the secondary effects in the horizontal expectation about Upper Secondary Education. In turn, the mediating role of the educational resources and the reading habits plummets, barely explaining 5% of the secondary effects in both horizontal expectations. Therefore, we can affirm that, in horizontal expectations, the indicators of highbrowculture participation explain a substantial part of secondary effects (up to 18% in the horizontal expectation about Upper Secondary Education), while the indicators about educational resources and skill-generating habits account only for a residual part.

6. Discussion and conclusions

The ultimate goal of this work was to study whether different decisional mechanisms proposed in the Cultural Capital and Rational Action theories mediate the secondary effects of social origin on educational expectations. Other works have already provided evidence on that respect (Golz and Wohlkinger, 2019¨ ; Puzi´c et al., 2019; van de Werfhorst and Hofstede, 2007), but this work assesses a longer list of mechanisms and examines separately vertical and horizontal expectations.

For starters, I report a substantial effect of social origin on the educational expectations of Spanish students, although notably larger in horizontal than vertical expectations. Previous studies on the evolution of educational expectations in Spain have observed that vertical inequality has been reduced over the last 15 years, while horizontal inequality has increased (Vald´es, 2021). As a very high proportion of students expect to enrol in Upper Secondary and Tertiary Education, there is no much room left for inequality and the effect of social origin on vertical expectations declines (Goyette, 2008; Renzulli and Barr, 2017). In turn, horizontal inequality increases either because upper-class students react and concentrate in the academic track (Lucas, 2001) or because lower-class students are diverted into the vocational track (Hillmert and Jacob, 2010).

In terms of composition, between two and three-fifths of the total effect of social origin are accounted for performance-related factors. However, primary effects are larger in vertical than horizontal expectations. Ancillary analysis showed that secondary effects were low in absolute terms in both vertical expectations, meaning that students from different social origins hold similar expectations about entering into Upper Secondary and Tertiary Education at each level of performance. In turn, secondary effects were large in absolute terms in horizontal expectations, therefore reducing the relative importance of primary effects. Furthermore, primary effects are also larger in short-term than long-term expectations, which makes sense since expectations about the immediate future are more realistic (Gottfredson and Lapan, 1997; Villarreal et al., 2015) – i.e. more dependent on prior performance – and, therefore, more affected by the underlying differences in performance.

Regarding the mediation of secondary effects, this work agrees with previous research in concluding that mechanisms from Rational Action and Cultural Capital theories are compatible in the explanation of the effect of social origin not explained by underlying differences in performance. The Relative Risk Aversion mechanism,

the number of sources of information accessed, the participation in the highbrow culture, the endowment of educational resources, and the development of skill-generating habits, all contribute to the explanation of the secondary effects of social origin. Nonetheless, at least three-fifths of those secondary effects remained unexplained, and, contrary to previous research, neither the fear of failure nor the economic concerns of the student exert any mediation because, although they are affected by social origin, they do not influence expectations after considering performance and the rest of the mechanisms.

Consistently with Breen and Goldthorpe (1997), the concern with social maintenance does not vary by social class and, therefore, do not mediate the secondary effects in any educational expectation. In turn, the dissatisfaction with middle-class occupations – which capture the RRA mechanism – does mediate secondary effects. Overall, students from different social origins but with similar academic performance hold different expectations not because salariat-class students fear more downward social mobility than non-salariat-class students, but because they are more exposed to that risk. Nonetheless, although the RRA mechanism is a relevant factor in the explanation of the inequality in educational expectations, it is far from being the only mechanism that mediates secondary effects (Barone et al., 2018; Jacob et al., 2020), and it seems to perform better in horizontal expectations.

Interestingly, the number of sources of information accessed by the student operates differently in horizontal and vertical expectations. Salariat-class students always obtain information from a more varied range of sources, but the indicator is positively associated with the expectation of enrolment in post-compulsory education and negatively associated with the preference for the academic track. As a result, while it is an important mediator of secondary effects in vertical expectations, it works as a suppressor in horizontal expectations. Put differently, if there were no differences in the number of sources of information accessed between salariat and non-salariat students, the effect of social origin will be lower in vertical expectations but larger in horizontal expectations. Anyway, longitudinal data is required to assess whether students look for more information because they have already decided not to enrol in the academic track or they prefer vocational education as a result of the search for information.

Finally, cultural capital proved to be a very important mediator of social origin over and above performance, meaning that part of the inequality in educational expectations labelled as secondary effects is the result of the participation in the highbrow culture, the disposition of educational resources and the development of reading habits. Jointly, they explained almost one-fourth of the secondary effects after accounting for several rational action mechanisms. However, the participation in the highbrow culture accounts for a larger part of that mediation, particularly in horizontal expectations where skill-generating cultural capital only contributes marginally to produce inequality at each level of performance. I argued that the participation in the highbrow culture mediates secondary because teachers might boost the ambition of equally-achieving students only if they show certain cultural traits, while the endowment of educational resources and the development of skillgenerating habits may contribute to normalize academic life and incorporate the hegemonic goals at schools. Nonetheless, no specific mechanism has been tested to determine specifically why cultural capital mediates secondary effects.

To conclude, it is important to acknowledge the limitations of the present study. On the one hand, the crosssectional nature of the PISA study impedes to interpret causally the results. Furthermore, the reverse causality problem typical in the framework of primary and secondary effects also applies to this work. On the other hand, and despite the large amount of information collected in PISA, data limitations affect the construction of some indicators. In particular, fine-grained measures about the anticipated probability of success in each educational alternative and the economic concerns of the students might explain an additional part of the secondary effects of social origin. Also, the index of dissatisfaction with middle-class occupations is built using the expected occupation at age 30. This expectation might not be aligned with the most satisfactory or desired occupation. If that was the case, the indicator only poorly reflects the degree of dissatisfaction with any reference occupational category. Despite its shortcomings, however, this paper offers valuable insights on how inequality is produced at each level of performance in vertical and horizontal expectations and piles on that body of research

that has found suitable ways to combine different theoretical approaches in the study of the configuration of educational expectations. **Funding**

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I thank Rafael Feito for his comments on an early draft of this work. The responsibility for the content of this publication lies with the author. **Appendix A. Missing information**

Table A1 reports the missing data in each of the variables considered in the study. As can be observed, the percentage of missing cases is high for some variables. As a result, 37.6% cases presented a missing value in at least one variable. In the subsamples of students defined for the horizontal expectations about Upper Secondary and Tertiary Education, that percentage of missing cases is 35.2% and 33.6%, respectively.

Table A1

Percentage of missing values and fraction of missing information.

	Missing	
	N	%
Social class	2388	6.7
Social maintenance concerns	6249	17.4
Dissatisfaction with middle-class occupations	6822	19.0

(continued on next page)

Table A1 (continued)

	Missing	
	N	%
Fear of failure	2313	6.4
Economic concerns	7734	21.5
Sources of information	5305	14.8
Cultural possessions	477	1.3
Educational resources	476	1.3
Reading habits	914	2.5
Number of books	636	1.8
Academic ability	0	0.0
Number of repetitions	0	0.0
Pre-vocational program	0	0.0
Sex	0	0.0
Migrant background	1098	3.1

The comparison of missing and complete cases revealed that the subsample of missing cases performs worse in PISA, repeated more times, and were males and immigrants more frequently (Table A2). Therefore, they cannot be considered missing completely at random (MCAR).

Table A2

Comparison between missing and complete cases.

	Missing cases	Complete cases	Difference
Performance in PISA	472.2 (84.9)	502.9 (79.5)	30.7 (0.883)***
Number of grade repetitions	0.41 (0.63)	0.25 (0.51)	− 0.16 (0.006)***

Sex (Males)	0.48 (0.50)	0.51 (0.50)	0.03 (0.005)***
Migrant (Natives)	Background 0.86 (0.35)	0.90 (0.31)	0.04 (0.004)***

To handle that situation, I resort to Multiple Imputation by Chained Equations (MICE). To decide the number of imputed datasets, I follow the two-stage procedure proposed by von Hippel (2020). In a first step, I conduct a pilot analysis with 30 imputed datasets and obtain an estimate for the Fraction of Missing Information (FMI) with a 95% confidence interval. In the second step, I plug in the upper-bound of that interval into the formula proposed by von Hippel (2020) to assess whether I need a higher number of imputed datasets. I repeat that process for each dependent variable and keep the highest number of imputations required. For the vertical expectation of enrolment in Upper Secondary Education, the estimated FMI is 0.44 (95% CI: 0.32–0.56), so the necessary number of imputations to guarantee that standard errors do not change more than 5% if imputed again is 65. **Appendix B. Construction of indices**

Table B1

Description of the variables in the study

Variable		Indicator	Scale
Performance-ability	Academic related factors	PV1MATH-PV10MATH; PV1SCIE-PV10SCIE	
	Course repetitions	GRADE	
	Educational position	PROGN	0–3
			1–2
Rational action factors	Social maintenance concerns (α = 0.707)	EC153Q07HA – Importance of the social status of the occupation I want	1–4
		EC153Q010HA – Importance of the employment opportunities for the occupation I want	
	Dissatisfaction middle-class occupations	EC153Q011HA – Importance of the expected salary of the occupation I want	
		with BSMJ – Expected occupation at age 30 (ISEI 10– score)	
	Fear of failure	90	
		ST183Q03HA – When I am failing, this makes me doubt my plans for the future	1–4
	Economic concerns	EC153Q08HA – Importance of financial support for education or training	1–4

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Sources of information	EC150Q01WA – I did an internship	0–1
	(α = 0.697) EC150Q02WA – I visited a worksite	
EC150Q03WA – I visited a job fair		
EC150Q04WA – I spoke to a career advisor at my school		
EC150Q05WA – I spoke to a career advisor out of my school		
EC150Q06WA – I completed a questionnaire to find out about my interests and abilities EC150Q07WA – I researched the Internet for information about careers		
EC150Q08WA – I went to an organised tour in post-compulsory institutions		

Table B1

Indicator		Variable Scale
		EC150Q09WA – I researched the Internet for information about post- compulsory education
Cultural capital factors	Cultural possessions (α = 0.662)	ST011Q07TA – Classic literature 0–1
	Educational resources (α = 0.408)	ST011Q08TA – Books of poetry ST011Q09TA – Works of art ST011Q16NA – Books on art, music, or design ST012Q09NA – Music instruments ST011Q01TA – A desk to study at 0–1 ST011Q03TA – A quiet place to study ST011Q04TA – A computer you can use for schoolwork ST011Q05TA – Educational software ST011Q10TA – Books to help with your schoolwork
	Reading habits (α = 0.608)	ST167Q01IA – How often do you read these 1–5 materials because you want to? Magazines ST167Q02IA – How often do you read these materials because you want to? Comic-books ST167Q03IA – How often do you read these materials because you want to? Non-fiction books ST167Q04IA – How often do you read these materials because you want to? Fiction books ST167Q05IA – How often do you read these materials because you want to? Newspapers
	Number of books	ST013Q01TA – Number of books at home 0–750

Appendix C

Table C1

Logistic model for the Vertical Expectation of enrolment in Upper Secondary Education

M1	M2 Mediation (Primary Effects)	M3 Mediation (Secondary Effects)
Social class: Salariat	0.050 (0.007) ***	0.018 (0.006)*** 0.012 (0.006)**
Academic ability (standardized)	0.039 (0.003)***	38.5% 0.035 (0.003)***

	***			***	
Pre-vocational program	0.013 (0.019)	0.3%		0.010 (0.018)	
Social maintenance concerns				− 0.004 (0.003)	− 0.7%
Dissatisfaction with middle-class occupations				0.001 (0.000)***	7.4%
Fear of failure				0.001 (0.002)	− 0.2%
Economic concerns				0.004 (0.003)	− 1.0%
Sources of information				0.019 (0.007)**	3.7%
Cultural possessions				0.016 (0.009)*	9.1%
Number of books (hundreds of books)				0.001 (0.001)	3.7%
Educational resources				0.040 (0.010)***	7.1%
Reading habits				0.006 (0.003)**	2.7%
Sex: Male	0.025 (0.005)		0.018 (0.004)***	0.013 (0.005)***	
Migrant Background: Native	0.027 (0.009)			0.005 (0.007)	− 0.003 (0.007)
Number of repetitions		− 0.043 (0.003)	20.1%	− 0.037 (0.004)	
*** Total Mediation		58.8%		31.9%	

Note: ***p-value ≤ 0.01; **p-value ≤ 0.05; *p-value ≤ 0.10. Results are presented as Average Marginal Effects. Columns M1, M2, and M3 display the corresponding models without any correction, while both mediation columns are corrected with KHB.

Table C2

Logistic model for the Horizontal Expectation of enrolment in Upper Secondary Education

Social class: Salariat	0.161 (0.010)***	0.073 (0.008)***		0.050 (0.008)***	
Academic ability (standardized)		0.105 (0.005)***	29.4%	0.079 (0.005)***	
Number of repetitions		− 0.138 (0.007)***	17.4%	− 0.128 (0.007)***	
	M1	M2	Mediation (Primary Effects)	M3	Mediation (Secondary Effects)

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Table C2

	M1	M2	Mediation (Primary Effects)	M3	Mediation (Secondary Effects)
Pre-vocational program	0.232 (0.065)***			0.193 (0.061)***	
Sources of information		0.103	−0.100 (0.015)***		−4.3%
Cultural possessions			0.059		8.0%
Number of books (hundreds of books)			0.010 (0.002)***		10.0%
Educational resources			0.079 (0.016)***		3.4%
Reading habits			0.018 (0.004)***		1.9%
Sex: Male	0.121 (0.008)***		0.072 (0.007)***		48.0%
Migrant Background: Native	0.009 (0.012)	−0.069 (0.010)***	−0.066 (0.010)***		28.9%
Fear of failure			0.000 (0.003)		0.0%
Economic concerns			0.008 (0.005)*		0.5%
Social maintenance concerns			0.006 (0.005)		0.2%
Dissatisfaction with middle-class occupations			0.004 (0.000)***		10.3%
					1.2%
Total Mediation					

Note: ***p-value ≤ 0.01; **p-value ≤ 0.05; *p-value ≤ 0.10. Results are presented as Average Marginal Effects. Columns M1, M2, and M3 display the corresponding models without any correction, while both mediation columns are corrected with KHB.

Table C3

Logistic model for the Vertical Expectation of enrolment in Tertiary Education

	M1	M2	Mediation (Primary Effects)	M3	Mediation (Secondary Effects)
Social class: Salariat	0.123 (0.009) ***	0.054 (0.008)***		0.033 (0.008)***	
Academic ability (standardized)		0.090 (0.004)***	34.2%	0.076 (0.004)***	
Number of repetitions		−0.095 (0.005) ***	17.4%	−0.076 (0.005) ***	
Pre-vocational program		0.067 (0.029)**	0.6%	0.067 (0.031)**	
Social maintenance concerns				0.005 (0.005)	0.3%
Dissatisfaction with middle-class occupations				0.002 (0.000)***	8.5%
Fear of failure				0.000 (0.003)	0.0%
Economic concerns				0.005 (0.004)	−0.4%
Sources of information				0.114 (0.013)***	7.2%
Cultural possessions				0.045 (0.011)***	8.6%
Number of books (hundreds of books)				0.005 (0.002)**	6.9%
Educational resources				0.071 (0.016)***	4.1%
Reading habits				0.021 (0.004)***	3.0%
Sex: Male	0.073 (0.007)***	0.060 (0.007)***		0.042 (0.007)***	
Migrant Background: Native	0.084 (0.013) ***	0.011 (0.011)		0.015 (0.011)	
Total Mediation		52.1%		38.1%	

Note: ***p-value ≤ 0.01; **p-value ≤ 0.05; *p-value ≤ 0.10. Results are presented as Average Marginal Effects. Columns M1, M2, and M3 display the corresponding models without any correction, while both mediation columns are corrected with KHB.

Table C4

Logistic model for the Horizontal Expectation of enrolment in Tertiary Education

	M1	M2	Mediation (Primary Effects)	M3	Mediation (Secondary Effects)
Social class: Salariat	0.186 (0.010) ***	0.103 (0.009)***	0.072 (0.008)***		
Academic ability (standardized)		0.133 (0.006)***	27.2%	0.093 (0.005)***	
Number of repetitions		− 0.154 (0.010) ***	12.8%	− 0.136 (0.010) ***	
Pre-vocational program		0.136 (0.092)	0.4%	0.113 (0.088)	
Social maintenance concerns				0.005 (0.006)	0.2%
Dissatisfaction with middle-class occupations				0.007 (0.000)***	9.9%
Fear of failure				− 0.005 (0.004)	0.2%
Economic concerns				0.015 (0.005)***	− 0.6%
Sources of information				− 0.046 (0.015) ***	1.3%
Cultural possessions				0.078 (0.013)***	7.4%
Number of books (hundreds of books)				0.011 (0.002)***	7.9%
Educational resources				0.057 (0.021)***	1.6%
Reading habits				0.025 (0.005)**	1.6%
Sex: Male	0.166 (0.009) ***	0.158 (0.008)***	***	0.116 (0.008)***	
Migrant Background: Native	0.025 (0.014) ***	− 0.067 (0.011) ***	***	− 0.058 (0.011)	

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Table C4

	M1	M2	Mediation (Primary Effects)	M3	Mediation (Secondary Effects)

Total Mediation	40.3%	26.9%

Note: ***p-value ≤ 0.01; **p-value ≤ 0.05; *p-value ≤ 0.10. Results are presented as Average Marginal Effects. Columns M1, M2, and M3 display the corresponding models without any correction, while both mediation columns are corrected with KHB.

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