Same performance, different paths. Social status, school performance and choices after compulsory

Mismos rendimientos, diferentes trayectorias. Estatus social, desempeño escolar y decisiones tras la educación obligatoria education

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Abstract

The sociological literature has made great efforts to clarify the effect of social origin on educational trajectories. This influence has been analyzed directly, based on the impact of social origin on school decisions, and indirectly, considering school performance (Boudon, 1974). However, to date, the study of primary and secondary effects in Spain has been carried out considering a dual scenario (Baccalaureate versus vocational training). Consequently, those who, having completed compulsory education, do not attain any post-compulsory education qualification have yet to be considered. The non-analysis of students who drop out of school can lead to a statistical bias in the educational performance analysis.

To account for the role of social origin, this paper examines students' educational performance in a multiple-choice context, considering options such as dropout, Vocational Training, or Baccalaureate.

Our purpose is to find out to what extent social origin affects school decisions when we measure individuals with the same performance, measured through the scores in Language in the last year. Employing a mediation model (non-linear probability nested, KHB model) with the longitudinal survey of the

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Andalusian Panel on Education and Labor Market Transitions (IECA, 2010 and 2018, n=1,502), our results indicate that the direct effect of socioeconomic status explains up to two-thirds in the variability of educational decisions after post-compulsory education. On the other hand, the indirect effect of social background, i.e., its direct influence on academic performance, manages to explain up to one-third of the variability in educational decisions. Far from disappearing, socioeconomic status continues to influence educational choices, even when controlling for achievement.

Keywords: educational inequalities, social origin, school performance, educational decisions, social status, social classes, school dropout, primary and secondary effects.

Resumen

La literatura sociológica ha desplegado grandes esfuerzos para esclarecer el efecto que tiene origen social en las trayectorias educativas. Esta influencia se ha analizado tanto de forma directa, a partir del impacto que tiene el origen social en las decisiones escolares, como indirecta, tomando en consideración el rendimiento escolar (Boudon, 1974). No obstante, hasta la fecha en España, el estudio de efectos primarios y secundarios se ha realizado tomando en consideración un escenario dual (bachillerato versus formación profesional). En consecuencia, no han sido considerados aquellos que, habiendo terminado la educación obligatoria, no alcanzan ningún título de educación postobligatoria. Esto supone dejar de analizar una parte importante de la población estudiantil pudiéndose generar un sesgo estadístico.

El presente trabajo trata de dar cuenta del papel del origen social considerando el rendimiento educativo del alumnado en un contexto de elección múltiple (Abandono, Formación Profesional o Bachillerato). Nuestro propósito radica en saber en qué medida el origen social actúa sobre las decisiones escolares cuando medimos a individuos que tienen el mismo rendimiento, medido a través de las puntuaciones en Lengua del último curso. Empleando un modelo de mediación (de probabilidad no lineal anidado, modelo KHB) con la encuesta longitudinal del *Panel de Educación y Transiciones al Mercado Laboral de Andalucía* (IECA, 2010 y 2018, n=1.502), nuestros resultados indican que el efecto directo del estatus socioeconómico explica hasta dos tercios en la variabilidad de las decisiones educativas tras la educación postobligatoria. Por otro lado, el efecto indirecto del origen social, es decir, su influencia en el rendimiento académico logra explicar hasta un tercio de la variabilidad de las decisiones educativas. Lejos de desaparecer, el estatus socioeconómico sigue condicionando las decisiones educativas incluso cuando se controla por rendimiento. Por último, estos resultados corroboran la existencia de un *efecto de compensación* en los estudiantes de alto estatus socioeconómico y bajo rendimiento.

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Palabras clave: desigualdades educativas, origen social, desempeño escolar, decisiones educativas, estatus social, clases sociales, abandono escolar, efectos primarios y secundarios.

Introduction

Some decades ago, several social scientists pointed out that social origin, understood as the highest position attained by one of the parents in terms of both income and education, took two different paths when it exerted its influence on educational decisions (Boalt, 1947; Boudon, 1974; Girard & Bastide, 1963). These decisions were about whether or not to continue studying after completing a given stage of schooling.

The first of these channels - referred to as *primary effects* - focused on the impact that social origins have on schooling decisions. It is known that students who come from lower classes obtain worse results than those who come from middle and upper classes (OECD, 2016). They also have worse school attaiment. This evidence is found in most countries analyzed to date, although there are deep gaps as one moves from one set of countries to another. To examine this relationship, the *Program for International Student Assessment* (PISA) assessments created the *Socio-economic and Cultural Status,* a measure that summarized the economic, social, and cultural resources of households (Willms, 2006). The persistence of this type of educational inequalities is the basis on which one of the most popular sociological currents of the second half of the 20th century was devised: *the theory of social reproduction* (Baudelot & Establet, 1992).

The second way in which social origins influence educational decisions arises when controlling for student performance. When we block its impact and compare the school decisions of those students who have the same school performance but different social origins. When the latter factor is considered, far from eliminating the influence of social origin, it continues to have an impact on educational decisions. In other words, students with similar school results make different educational choices that vary according to their social origin. Raymond Boudon (1974) called this type of consequences as *secondary effects*. There is no doubt that when he theorized about them, the French sociologist had an idea in mind. First, he was trying to explain educational inequality on the basis

of material constraints beyond cultural influences. Second, on the level of social justice, his analysis was to show that the role of the school in the task of distributing the most desirable social positions is limited by the economic potential of families.

In this article, we will analyze the role of secondary effects in post-compulsory education in Andalusia. We analyze them under a multinomial design that considers the three choices that students make when they finish compulsory education (choosing baccalaureate, vocational training or dropping out). At least in Spain, the studies devoted to this topic are restricted to the study of two options (Bernardi & Cebolla, 2014; Valdés, 2020). We think that restricting the population that finishes secondary school to only two options may lead to an underestimation of the impact that social origin has on school decisions since those young people who drop out of the educational path and join, or not, the labor market, are those who come from the lowest socioeconomic statuses. This attrition of the sample can lead to biases when we wish to know whether there is a social compensation effect whereby more advantaged families take academic paths with greater probability than families that are less advantaged, even though their students obtain lower or even mediocre average grades.

Our purpose is to find out to what extent social background plays a role when we compare individuals with the same performance. The results showed that social origins play a role in educational decisions even when we consider the role of academic performance. More specifically, they indicated that as the social status of families increases the probability of students pursuing baccalaureate rather than professional studies or dropping out of school increases even when controlling for performance. In fact, in each of the options we have considered, socioeconomic status accounts for between 60 and 70% of the variability in the decision. We also find a clear compensation effect when calculating the probabilities of opting for baccalaureate versus dropping out.

In terms of social mechanisms, we take up Gambetta's idea (2019) of *overadaptation*. According to this idea, the decisions made by students are strongly conditioned by the contexts in which they are generated. We make use of this idea, but update it in a contemporary scenario of greater educational expansion. Finally, we indicate how this research could be used in terms of public policy.

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Theory and Bibliographic Review

Primary and Secondary Effects

We owe the conceptualization of primary and secondary effects to the French sociologist Raymond Boudon (1974) although it had been previously sketched by other authors. This theoretical distinction was made in the 1970s, in an epistemological context dominated by culturalist explanations. In their famous work *La Reproduction* [1972], Pierre Bourdieu and Jean-Claude Passeron (2001) argued that the bulk of the explanation for school inequalities lay in cultural differences. Students from different social classes entered school with a very unequal initial cultural background. However, the school, instead of behaving as a neutral institution -valuing all cultural manifestations in the same way- positively appreciated the culture of those students who came from the middle and upper classes and undervalued those other cultural expressions that came from the popular classes. Or, to put it another way, using Bourdieu and Passeron's terminology (1972): the school rewarded those *habitus* that had been forged in contact with high culture -or *haute culture*- be it literary, musical or/and artistic, and branded as ordinary, vulgar and/or common those others that were a consequence of contact with popular culture. Thus, what teachers understood to be a sign of the student's brilliance was nothing more than the result of an early exposure to certain intellectual and artistic stimuli by his or her peers. It was, then, under this institutional logic that the symbolic expressions of the middle classes became an asset or, more specifically, a matter of what came to be called *cultural capital*. Thus, the school made social differences legitimate by transforming them into personal differences resulting from individual talent.

In contrast to Bourdieu and Passeron, Boudon (1974) considers the decisions made by students and their families as rational acts subject to constraints known, to a large extent, to the actors. His work referenced the previous work of Keller and Zavalloni (1964) on social class and ambition. In that paper, it was postulated that the relative distance to a good, generates differences in the probability of ambition. Or, in other words, as we are able to satisfy a good, its desire also increases. Boudon thus attempted to explain the mechanics of school inequalities

by focusing on the decisions made at the *micro level by* individuals and their families, disregarding any functional logic attributed to the latent functioning of social institutions. What mattered most were the differential economic resources of students from different social classes and not the culture they brought to class.

The impact of social class on schooling decisions was thus felt in two different ways. On the one hand, the *primary effects* refer to the indirect impact that the social class of origin has on the educational performance of their offspring. That is, how the resources, teachings, skills and stimuli carved out in the family environment can have an impact on the improvement of cognitive skills and on the specific skills required for good school performance. And this, in turn, will result in opting for one of the most desired educational choices, those for which greater ambition is required: the baccalaureate. Three main mechanisms, according to Jackson (2013)-beyond the strictly congenital ones[1] - explain the indirect impact of the family environment on inequalities in educational opportunities:

First, there is the family environment and the economic, cultural and social resources that families provide to their offspring. A great deal of research has shown how greater availability of economic resources helps to improve learning. These can take the form of enrolling in a language school, hiring a private teacher or purchasing teaching materials. Second, there is cultural capital that can have a direct and indirect positive effect on educational attainment and achievement. Finally, other studies shed light on how social capital can have an effect on both educational and class achievement.

Boudon posited his model as a diachronic model of decision processes in which students and their families made an estimate of which options would bring them the greatest future benefits given specific direct and indirect costs (Barone et al., 2018). More specifically, the aim was to explain why, while working class students dropped out as soon as failure knocked on their doors, their peers from the middle classes persisted time and again in continuing their studies, despite their poor performance. This procedure was conceptualized in *secondary effects*.

[1] Numerous studies have been addressing the complex research on the combined effect of inherited genetic and purely environmental aspects. After the famous Bell's study that initiated these approaches, sociology abandoned this avenue of research as non-sociological without taking into account that environmental factors can also affect genetic factors. For more details on the models of "*genetics endowments*" or the study of "*polygenic scores*" and their relationship with educational inequalities, see Barth, Papageorge & Thom (2020).

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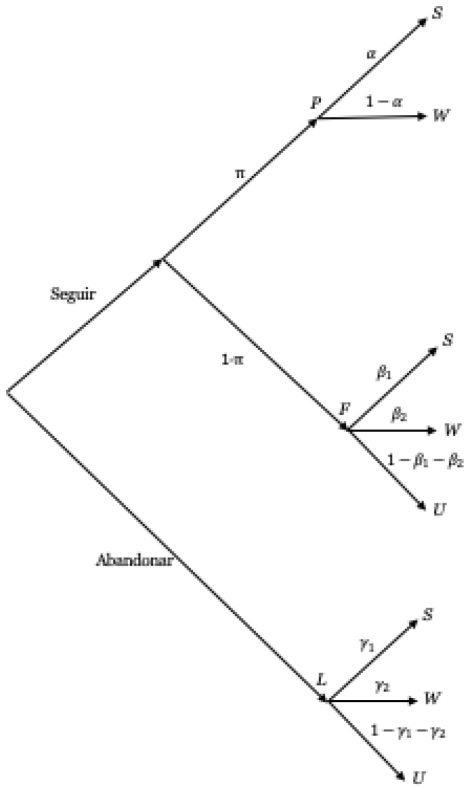
Boudon (1974) developed these arguments based on simulated, not real, data. It was the American sociologist Robert Mare (1980, 1981) who analyzed educational transitions as a successive and discrete set of events in the same way as Boudon but with real data. As one progresses through each of these years, the proportion of students with medium and high social status increases as those with lower status drop out. Thus, students with fewer resources are less likely to make the decision to continue to the more advanced stages. In order to pursue this idea, Mare used a set of binomial logistic regressions. Subsequently, these models were reworked to consider the lack of representativeness of the samples as students of socioeconomic status were no longer included in the higher school stages. This is what is known as *sample attrition bias* (Winship & Mare, 1992).

In this regard we should not forget to mention the work initiated by Gambetta who in 1983 will publish a work in tune with those previously mentioned (Gambetta, 2019). In his search for the mechanisms involved in successive educational decisions, the Italian sociologist found, rather than an adaptation to the circumstances of the lived environment, an *over-adaptation* to it. Low-status students tended to underestimate their chances of success regardless of their performance. Conversely, students from more privileged backgrounds tended to overestimate their chances of success by taking even the riskiest decisions even with poor school performance.

Later on, the scheme proposed by Mare will acquire its microeconomic embodiment in the mathematical modeling work undertaken by Richard Breen and John H. Goldthorpe (1997). They proposed a probability ordering model in which spillover effects were derived from the amount of relative risk aversion exhibited by students and their families. Figure I shows the construction of the decision tree created by both authors. They assumed that all families prevented their children from falling further below their social position by always avoiding downward mobility (Goldthorpe & Breen, 2010). Their theory was based on a utility function in which costs, benefits and subjective probabilities of success were computed. According to these authors, all students and their families aspire to go as far as possible in the educational system as this increases the probability of avoiding downward mobility and, consequently, they do not differ in their attitudes towards school. However, they did differ in their resources and performance, hence their educational choices were different. Students with scarce resources considered the university route riskier, thus showing greater relative risk aversion than the more privileged classes.

FIGURE I. Simple decision tree



Source: Adapted from Goldthorpe and Breen (2010, p. 210).

The assumptions of this model were later relaxed by various authors through replacing risk aversion with loss aversion. According to Breen and Yaish (2006) as the *prospect theory* (Kahneman & Tversky, 1979) losses outweigh gains. Transferring to the field of education, this means that students and their families find greater utility in avoiding downward mobility than in achieving upward mobility. In other words, the less advantaged classes will take up vocational studies with greater propensity than the academic pathway since it guarantees class maintenance and minimizes the costs and risks that the other pathway -the baccalaureate- entails.

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Previous Investigation in Spain

One of the first studies in Spain that set out to unravel the influence of primary and secondary class effects on educational decisions was the one carried out by Bernardi and Cebolla (2014). This work is of special interest given that it evaluates the so-called *compensation effect*. According to it, secondary effects would not have an additive but an interactive form since scores and social class do not increase at the same rate. When grades are low, parents of higher social status push their children towards high school to a greater extent than parents of lower social status. However, two subsequent papers conducted by Troiano, Torrents and Daza (2019) and Merino-Pareja, Martínez-García and Valls (2020) found no evidence pointing, at least at the secondary stage, to a presence of the compensation effect.

Bernardi and Cebolla (2014) estimated that indirect effects accounted for three quarters of total educational inequality. Valdés (2020), on the other hand, considered that these effects are not so high. This may be because the variable chosen to account for performance, grade recall, shows hardly any variability. A continuous performance indicator should bring out more marked differences between social classes that would allow for a greater relative importance of the primary effects (Valdés, 2020). In his research, based on choice expectations with the PISA study in its 2003 wave, Valdés points to a smaller effect of secondary effects on total inequality.

Contrary to each of the investigations that have been previously carried out in our country, we are going to analyze each of the options that young people can take after completing compulsory secondary education, namely, baccalaureate, vocational training or dropping out of school. Concentrating the analysis of secondary effects on two paths (baccalaureate, vocational training) implies omitting from the analysis the population subject to the highest dropout rates[2]. Perhaps for this reason the compensation effect is not observed in the studies sketched above. In fact, subjects coming from lower socioeconomic strata are excluded from a choice that, although they have not made, since they have dropped out, they have been able to make at least eventually (since they have completed compulsory education but have decided not to continue studying).

[2] The same is not true for school failure rates, since the affected population is much smaller in number.

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Moreover, given the large effect of dropping out, in the worst case, this exclusion can lead to a selection bias since the selected sample becomes less representative as the educational stages (*attrition panel*). In theoretical terms, our research differs from previous studies in that we analyze the educational transition that students make when they finish secondary school *per se*, taking as the object of analysis the entire sample (except for those who do not have compulsory education). The rest of the studies take the same educational transition always with a view to more advanced studies. What is known as the at-risk population is not, in our case, composed of those who can go on to university studies or higher vocational training but, exclusively, of those who have had the opportunity to finish high school or intermediate vocational training.

Method

Sample

The data in this article comes from *The Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018, n=1,502). This longitudinal survey examines the educational trajectories of the same representative sample of individuals residing in Andalusia when they were 16 and 24 years old. It was conducted by the *Andalusian Institute of Statistics and Cartography* (IECA).

Variables

The variables that were selected are the following: the highest socioeconomic status of the household (either the father's or the mother's), the levels of performance obtained in language just before the student finished ESO (it was not possible to collect another type of subject due to the high rate of non-response), and gender. Our dependent variable is the choice after compulsory education: baccalaureate, vocational training or dropping out of the educational pathway.

Socioeconomic status was coded according to the *International Socio-Economic Index* (ISEI) scheme created by Ganzeboom et al. (1992). It expresses a score by occupation that is a function of a weighted average

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of income and years of education. This synthetic index coded social position better than education alone. By incorporating income (but together with education) we obtain a measure that allows us to analyze the constraints resulting from the scarcity of resources, both material and economic as well as cultural. The grades obtained in language were collected with scores from 1 to 10 and re-scaled into 4 quartiles (only for the analysis of compensation) (Table I).

TABLE I. Descriptive statistics of the sample

	FREQUENCY	MEDIA	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
Socioeconomic Status (ISEI)	1.501	41,17	12,92	20	70
Language Qualification last year	1.502	6,52	2,12	0	10
Language Grade Quartile	1.502	2,21	1,04	1	4
	FREQUENCY	**PERCENTAGE**			
Genre					
Men	720	47,94%			
Women	782	52,06%			
EDUCATIONAL DECISIONS					
Abandonment	298	21,55%			
Vocational Training	464	33,55%			
Baccalaureate	621	44,90%			

Source: *Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018).

Procedure

Sociology has used different methodological approaches to investigate the importance of the primary and secondary effects of social origin on educational decisions. All of them start from the following model: it must be taken into account that social origin (O) can affect educational decisions (E) both indirectly, through the primary effects that have an

impact in one way or another on students' academic performance (A), and directly, through their influence on educational decisions (secondary effects).

In the present study, we employed the mediation model called KHB (Karlson et al., 2012). This is a technique similar to the product of coefficients in structural equations but has the virtue of separating the changes in the coefficients due to rescaling from those other true changes that result from adding more values. For its execution, two latent linear models are made, whose only difference is that the first one contains a mediator (yield in our case) and the second one does not. This model is called Full o Complete and the other Reduced.

$$Y^* = \beta_0 + \beta_{1\,X} + \beta_{2\,.Z} + \varepsilon \text{ (Complete Model)} \quad (1)$$

$$Y^* = \gamma_0 + \gamma_{1\,X} + v \text{ (Reduced Model)} \quad (2)$$

Y^* corresponds to an unobserved continuous variable, x is the social origin and z the mediating variable. ε is the error independent of x and z that, on the other hand, is assumed to be only dependent on x. v is only dependent on x. In order to compare the coefficients of the two models, the dependent variable representing the propensity to move to the transition under studying is transformed into its binary expression.

The Full model (βx) is then subtracted from the Reduced ($\beta x \mid z$) to capture the true value of the confounder.

This model uses the residuals (R) of performance and/or motivation on academic performance (x).

$$R = z - (a + bx) \quad (3)$$

We use R instead of z in the reduced model.

$$Y* = \widetilde{\alpha} + \widetilde{\beta} X + \widetilde{\delta}_R\, C + \varepsilon \quad (4)$$

Since what distinguishes the residuals (does not explain performance on social origin) from the mediator (performance) is only the component related to social origin, the full model is more predictive than the reduced model. Or, put another way, the residuals are constituted by that which does not explain the performance on the social origin. Moreover,

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the residuals have the same standard deviation ($=\sigma_R\sigma_F$). These two scaling parameters depend in turn on the residual variable of the linear regressions of the Reduced and Full model. Each model is scaled according to the residual variance of the underlying model (Valdes, 2020).

Furthermore, since $\widetilde{\beta}=_R\beta_R$, the difference obtained from the estimated regression between (β_R) and (β_F) is written:

$$\frac{\widetilde{\beta}_R}{\beta_F}=\frac{\frac{\beta_R}{\sigma_R}}{\frac{\beta_F}{\sigma_F}}=\frac{\beta_R}{\beta_F} \tag{5}$$

Likewise, to test whether there is a compensation effect, what we do is simply model a log-additive and log-multiplicative regression. The first of these regressions is composed of the intercept, socioeconomic status (β_1X_1), academic qualifications (β_2X_2), gender (β_3X_3) and error (ε).The second adds the interaction of socioeconomic status with qualifications ($\beta_4X_1X_2$):

$$Y_i = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon \tag{6}$$

$$Y_i = \beta_0+\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_1X_2 + \varepsilon \tag{7}$$

As contrast statistic, we use the χ^2 and the *Bayesian Information Criterion* (BIC), but giving a greater preponderance to the former since the model we are trying to estimate is a parsimonious model with few parameters. We also present, as is often the case, the *Akaike Information Criterion* (AIC).

Hypothesis

Our hypotheses extend previous studies (Bernardi & Cebolla, 2014; Merino-Pareja et al., 2020; Troiano et al., 2019; Valdés, 2020) to include three options. In the first of our hypotheses, we test the extent of spillover effects by asking what influence socioeconomic status has on each of the educational decisions that can be made at the end of compulsory education, regardless of performance.

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- **H1**. *Performance-controlled social status has a strong impact on the whole set of educational decisions (including the choice of vocational training versus school dropout).*

Our second hypothesis postulates that there is a compensation effect. (Bernardi & Cebolla, 2014) which is also felt in each of the contrasted options. When the ratings are high or medium-high, the difference between statuses narrows and when they are low or medium-low, the same difference widens.

- **H2**. *The influence of status on educational choices varies interactively* with *performance*.

Results

In this section, we present the results of the models we have used to analyze the primary and secondary effects. However, before going deeper, to illustrate the enormous strength of the secondary effects, we have grouped social status into two categories: high and low. We have set aside educational achievement in its mean values (central tertile corresponding to values 7 and 8 of the language grades). The results are shown in Table II.

TABLE II. Social status and decision after compulsory education (core values)

	Baccalaureate	Abandonment	F. Professional
High Status	61,5%	9,9%	28,4%
Status Low	45,8%	16,6%	37,5%

Source: *Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018).

As can be seen, with average performance, 61.5% of students from high status backgrounds complete their baccalaureate studies, while only 45.8% of those from low status backgrounds do so. The figures are reversed when we look at dropout rates: only 9.9% of high-status students drop out, compared to 16.6% of low status students. As for vocational training, students from low status backgrounds are more likely to opt for this path (37.5% versus 28.4%).

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By a simple contingency table, we can see how, for the same result, the decisions made according to the status from which one comes are very different, even when the students demonstrate a similar level of school performance. The choices of those students who come from lower status backgrounds are much more conservative. In fact, as we have seen, more than 50% of students choose (opt) for the sum of Vocational Training and dropout, while, with the same qualification, this figure drops to less than 40% for those from higher status.

Let us look at the results of the KHB decomposition models integrating the whole sample. As we have seen above, this model analyzes the effect of social status on the decision to continue studies after compulsory education controlled for gender and mediated by performance. Table III shows the results. The first of the models, the total model, retains the impact of socioeconomic status together with performance. It is found that for each increase in the social status scale, the log-odds of doing baccalaureate instead of dropping out increase by 0.055. For example, the daughter of a primary school teacher (69) is 20% more likely to go to high school than the daughter of a car mechanic (31) and a waitress (30). Likewise, status increases the probability of doing vocational training instead of dropping out by half (0.022). It should be remembered that this choice (dropout vs. vocational training) has hardly been analyzed in previous research. When we consider the Baccalaureate vs. Vocational Training option, social status now increases the log-odds of the first of these options by 0.033. These results of the total model reflect evidence that is well known to the educational and scientific literature community: social status and attainment are good predictors of completion and the type of studies chosen after secondary education.

TABLE III. The primary and secondary effects of father's education in compulsory transition

	Baccalaureate vs Dropout	**Vocational Training vs.**	**Baccalaureate vs Vocational Training**
Total	0,055*** (0,006)	0,022*** (0,006)	0,033*** (0,005)
Direct	0,043*** (0,006)	0,017*** (0,006)	0,025*** (0,005)

(*Continued*)

TABLE III. The primary and secondary effects of father's education in compulsory transition (*continued*)

Indirect	0,012*** (0,002)	0,04*** (0,001)	0,07*** (0,001)
Performance	36,80%	21,94%	22,39%
R-Square	0,13	0,13	0,13
Cases	1383	1383	1383

Control: Gender *<0.05 **<0.01 <***0.001 (statistical significance level)
Source: *Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018).

When controlling for performance (direct model), these same log-odds drop to 0.043, 0.017 and 0.025 (but all reach maximum statistical significance). Explained with the previous example: Having the same grades in Language, the daughter of the primary school teacher has 16.7% more likelihood than the daughter of the mechanic, but she would be only 6.5% more likely to choose vocational training as opposed to abandoning all formal training. When comparing male and female students with the same performance, socioeconomic status has a smaller effect. However, it is unclear how much performance alone affects the decision to take the baccalaureate, pursue vocational training or drop out of secondary school.

As reflected by the indirect model, it explains 36.8% of all the variability. It drops to 22% in the second comparison (Vocational Training vs. Dropout) and to almost the same amount in the third (Baccalaureate vs. Vocational Training). As expected, it has a smaller effect when the most academic option is contrasted with the one with the least.

Once the decomposition using the KHB model has been carried out, we could ask ourselves whether there is a compensation effect already sketched in the previous literature. Two models are tested here: a log-additive model and a log-multiplicative model. The latter contains the socioeconomic status-performance interaction ($\beta_4 X_1 X_2$). A better fit of the former would justify the rejection of the compensation effect while a worse fit would imply the need to include this interaction.

Table IV shows the results obtained for each of the models. The first of these is the additive model in which social status and qualifications are allowed to vary jointly in a monotonic way. The second one allows

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these two dimensions to vary freely in their impact on educational decisions. The difference between the two models is shown in the final column.

TABLE IV. Contrasts of the additive and interactive models for each of the educational decisions made after compulsory education

EDUCATIONAL DECISIONS	ADDITIVE	INTERACTIVE	DIFFERENCE
Baccalaureate vs Dropout			
BIC	890,8	1018,12	127,31
AIC	871,5	872,13	0,62
Chi-Square	863,5	810,13	53,37 (0,00)*
Degrees of freedom	4	32	28
Baccalaureate vs Vocational Training			
BIC	1361,86	1563,12	201,26
AIC	1237	1279	0,04
Chi-Square	1333,9	1311,61	22,29 (0,89)*
Degrees of freedom	4	32	28
Dropout vs. Vocational Training			
BIC	970,07	987,08	17
AIC	1273	1334	0,06
Chi-Square	962,07	923,08	38,99 (0,008)*
Degrees of freedom	4	32	28

Source: *Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018).
* (statistical significance level).

The results obtained allow us to empirically observe the existence of the compensation effect. This is clear when we analyze the decision to take a baccalaureate vs. dropout. When the grades are high or medium-high, the difference between statuses narrows and when they are low or medium-low, the same difference widens. It is likely that this effect also occurs between the Vocational Training vs. Dropout disjunctive. However, it does not occur when the decision made by students and their families is in the decision to choose between Baccalaureate vs. Vocational Training, as happens to Troiano, Torrents, and Daza (2019) and Merino-Pareja, Martínez-García and Valls (2020). In short, when students who drop out -those who tend to have a lower social background- are

considered in each of the options, there does seem to be a compensatory effect. However, when they are excluded from any choice (they are not an at-risk population in statistical terms) we find that the effect of socioeconomic status and grades vary together in the same way. By at-risk population we mean the population that drops out and is excluded when analyzing the effect of social origin on students in Baccalaureate vs Vocational Training.

Conclusions

The evidence collected in this study supports the conclusions obtained in previous studies: secondary effects reinforce the impact of primary effects (Jackson, 2013). Or, in other words, socioeconomic status is felt in educational decision-making through the two channels established in previous literature: directly and indirectly by mediating through academic ability.

We have used *The Panel on Education and Transitions to the Labor Market in Andalusia* (2010 and 2018). This longitudinal survey collects the trajectories of the same representative sample of individuals residing in Andalusia when they were 16 and 24 years old. We collected language scores as a *proxy* for academic ability.

Our results show that as social status increases, the probability of doing baccalaureate rather than dropping out of post-compulsory studies increases even when controlling for performance (H1). In each of the options we have considered, socioeconomic status accounts for one-third of the total. The role of performance is smaller and reaches 36.8% of all variability in the first of the options. It drops to 22% in the second and to almost the same amount in the third. As expected, performance has a smaller effect when the most academic option is contrasted with the one with the least. The strength of the secondary effects increases as we move from the more academic to the less academic options, i.e., it is stronger in the choices Baccalaureate vs. Dropout and Baccalaureate vs. Vocational Training than in Vocational Training vs. Dropout.

From the same model, as contemplated in H2, it follows that *the influence exerted by status on educational choices varies interactively* according to *performance*.

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It should be noted that previous studies have not used dropouts. To our knowledge, this is the first study to include them in Spain. Not including them in their samples as an at-risk population - all those subjects who may eventually opt for some post-compulsory pathway given that they have a high school diploma - has the consequence of underestimating the effects, especially the compensation effect.

Public Discussion

When Italian sociologist Diego Gambetta wrote his *Were They Pushed or Did They Jump: Individual Decision Mechanisms in* Education*?* (2019) [1987], the magnitude and scope of educational expansion was much smaller than it is today. Since this work was published, the average years of education of the Italian population have increased by four years. According to estimates by Barro and Lee (2013) they went from six to ten years. A very similar figure was the one covered by the Spanish population.

If we were to compare the type of decisions students made at the time of the publication of Gambetta's book, forty years ago, with those made today, we would discover a fundamental change. Today, low and lower-middle status students who achieve high grades do not seem to exhibit any kind of overadaptation. The higher their grades go, the less they differ from those students who have a higher status. Or, to put it another way, once they do well in school, students of low socioeconomic status do not underestimate their chances, thus making the riskier and more costly decision. This is because they are confident that their chances of success outweigh their chances of failure, π, outweigh their chances of failure, $1- \pi$ given their good performance so far (Figure I). If we draw from previous literature of such a change we find two fundamental causes: educational reforms that were more inclusive in nature and economic improvements, which considerably reduced families' opportunity costs. Nor should we forget the growing thrust of technological change. Education has become a positional good (Hirsch, 2005; Salem et al., 2009). Everything seems to indicate that at the level of social mechanisms, this change of circumstances led to less risk aversion as gains outweighed losses (Breen & Yaish, 2006).

In contrast, their counterparts with poor grades drop out when poor grades emerge. On the other hand, it does appear that families with middle and high statuses try to promote their offspring through the most desirable routes in the educational system. This compensation effect emerges empirically as long as the representative samples of the surveys analyzed are not reduced.

In any case, one must agree with Michelle Jackson when she points out that the fact that secondary effects are stronger than primary effects is not bad news (2013). Indeed, it is much easier to influence and try to generate some change on secondary effects than on primary effects. It is less complicated to try to show parents through school counseling that the best decision their child can make is to pursue a baccalaureate than to try to inculcate cultural practices that are foreign to them. It is even more difficult to transform the quality, stability, and provision of their jobs.

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