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Social origin and expectation of postgraduate enrolment among spanish university undergraduates mediation and moderation effect of fields of study and grades

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ABSTRACT

The effect of social origin on educational expectations has mostly focused on adolescents. Yet, the expansion of higher education across the OECD area has made the transition from bachelor to master programs increasingly consequential for inequality of educational opportunities and social mobility. Applying multinomial logistic regression to data from a survey carried out in 2018 among university students in three Spanish regions, our research reveals the existence of a still meaningful effect of socioeconomic origin on expectations of postgraduate enrolment among university undergraduates, even after controlling for academic progression, performance and choice of field of study. In other words, the analysis provides evidence of a secondary effect of social origin on educational expectations at this late stage of the educational career. Multinomial logistic regression and the Karlson-Holm-Breen method applied to the same data also reveal the inexistence of a mediation effect of field of studies or academic performance. In this sense, our evidence points at a clearly higher weight of the secondary effect, rather than the primary effect of social origin, on the transmission of educational advantage to expectations of postgraduate enrolment among undergraduates. Yet, a moderating effect of both fields of studies and academic performance does exist. As regards field of studies, against our initial expectation, the effect of social origin turns out to be stronger in some fields of studies with better labour market access (strong fields). Regarding academic performance, the sensitiveness of postgraduate enrolment expectation to grades obtained so far decreases with social origin, thus revealing a lingering compensatory effect of social origin at the end of the educational trajectory.

1. Introduction

Educational expectations are regarded as *realistic* appraisals of how far students expect to reach in their educational trajectory, whereas educational aspirations are thought to indicate the highest level that students *wish* to attain. Hence, relative to aspirations, educational expectations are considered a reasonably good predictor of educational attainment (Andrew & Hauser, 2011; Park, 2021; Wu & Bai, 2015). Looking at social inequality in terms of educational expectations may thus be a good way of approaching a kind of educational inequality still to be.

Educational expectations are often explored at 15 years of age, the age at which individuals begin to have a more autonomous and realistic view of the highest level of education they expect to attain. In many countries, it is also the age at which both compulsory education is completed and students have to choose between educational tracks that will be decisive for their ultimate educational credentials. Yet, educational expansion has increased the relative importance of later educational transitions. Access to higher education is one of them, but not necessarily the last. Between the academic years 2003–2004 and 2008–2009, a 20% increase in postgraduate education enrolment was reported in Australia, Canada, and the US (Morgan, 2014). Around the same time, the transformation brought about by the Bologna Reform heightened the salience of the distinction between bachelor's and master's degrees in the countries belonging to the so-called European Higher Education Area (EHEA).

This relative increase in postgraduate enrolment and attainment may be explained, among other reasons, by an increase in the returns of postgraduate vis-à-vis bachelor's diplomas. Since the 1980s, college postgraduates' wages in the US have grown at a much faster pace than wages for other university degrees (Lemieux, 2008). To a varying degree, this trend is replicated in other OECD countries, with clear

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implications for occupational attainment and social mobility (OECD, 2021). Hence, studying the inequality in the transition from bachelor's to master's degrees has become increasingly necessary for a complete picture of educational inequality and social mobility (Posselt & Grodsky, 2017).

Since they are more mature individuals, university students' expectations may be better informed than those of teenagers. Thus, it is reasonable to expect any eventual inequality in expectation of postgraduate enrolment among university undergraduates to predict ultimate educational inequality to a greater extent than it does for teenagers. Yet, little attention has been paid to educational expectations among undergraduate students. Moreover, although social inequalities in access to postgraduate education are receiving more and more attention (Oh & Kim, 2020; Wakeling & Laurison, 2017), not much attention has been paid to the *mechanisms* behind an eventual social origin effect on the transition from bachelor's to master's degrees. The current research aims to contribute to this literature, first, by considering educational expectations at this late stage of the educational trajectory and, second, by looking at the mediation and moderation effect of field of studies and academic performance on any eventual association between social origin and expectations of postgraduate enrolment.

2. Theoretical framework

2.1. Social origin and educational expectations among university undergraduates

The Wisconsin Model of status attainment puts educational expectations in the middle of the association between social origin and educational attainment (Sewell et al., 1969, 2003). But there are arguments to consider educational expectations increasingly detached from social origin as we move up the educational ladder (Mare, 1981; Stolzenberg, 1994). Following the so-called 'life-course hypothesis' (Triventi, 2013), undergraduate students may already be autonomous enough to form their own expectations, fully detached from their social origin. Besides, by the time they get access to university, students from a lower social background may have become more positively selected on the basis of a number of personality traits that also drive up educational expectations (e.g., persistence, tenacity, ambition) than students from more advantaged social backgrounds, who can rely on other boosters of their educational trajectory. Thus, when their expectations are compared at this late stage in the educational career, any effect of social origin might have disappeared ('selection hypothesis'). In line with this, Mare (1981) and Stolzenberg (1994) initially found little evidence of fathers' education or socioeconomic origin on students' attendance in graduate programmes.

Yet, there are also theoretical reasons to conceive a lingering effect of social origin on educational attainment and educational transitions, an effect that goes beyond access to higher education (Torche, 2011). According to the Maximally Maintained Inequality thesis, equalisation of educational opportunities would only happen at a given educational stage when almost everybody is attending and/or graduating from it. Students from an upper social origin would then strive to attain the additional advantage guaranteed by the next level of educational attainment, and they would be better equipped to seize any opportunity offered by such an expansion (Ballarino et al., 2021; Barone, 2019; Raftery & Hout, 1993). Thus, the main level at which inequality of educational opportunities develops would move forward to higher levels of educational attainment, but the overall level of educational inequality would remain the same ('persistent inequality'). This logic fits well with what might currently happen with expansion of higher education: first, such an expansion may be exploited to a larger extent by students from an upper social origin; second, any possible equalising effect of a more generalised access to undergraduate studies may be counteracted by a more unequal access to postgraduate education.

Recent empirical evidence is more supportive of the idea of a lingering effect of social origin than of a waning effect of it, possibly because educational expansion has substantially changed the scenario in which Mare and Stolzenberg initially formulated their ideas. There is evidence from the US (Mullen et al., 2003; Oh & Kim, 2020), Canada (Zarifa, 2012), and the UK (Wakeling & Laurison, 2017) that parental education increases the opportunities of children of highly educated parents to attend graduate school, relative to children of low-educated parents. Within the EHEA, there is evidence for Germany (Neugebauer et al., 2016) and Italy (Argentin & Triventi, 2011) that the salience of postgraduate education brought about by the Bologna Reform has also been accompanied by increasing inequality in access to postgraduate education. This leads to the formulation of the following hypothesis:

Hypothesis 1. Undergraduate students from a more advantaged social origin are more likely to expect postgraduate enrolment than students from a less advantaged social origin.

Although the effect of social origin on the transition from undergraduate (bachelor's degree) to graduate studies (master's degree) is receiving increasing attention, relative to the transition from upper general education to higher education, much less attention has been paid to the *mechanisms* behind an eventual effect of social origin at that late stage of the educational trajectory. In the following sections, we address the possibility that field of studies and academic performance (grades) work as mediators and/or moderators of the impact of social origin on expectations of postgraduate enrolment among university undergraduates.

2.2. Field of studies: mediatory and moderator role

The Effectively Maintained Inequality (EMI) thesis (Lucas, 2001) supports the role of field of studies as a channel of transmission of intergenerational advantage. Yet, this theory has been more effective in showing horizontal dimensions of inequality in *access* to higher education (field of studies/institutional prestige) than in formulating predictions about how one of these horizontal dimensions (field of studies) contributes to an eventually higher expectation of postgraduate enrolment among students from a more advantaged social origin (high-SES students, henceforth). According to the EMI thesis (Lucas, 2001), once a certain level of education becomes saturated, students from a more advantaged social origin manage to draw a competitive advantage from horizontal dimensions of differentiation within that level of education. Institutional prestige and field of studies are two of these horizontal dimensions. Although EMI theory has been more effective in demonstrating the role of institutional prestige than that of fields of study, there is evidence that undergraduate students from a higher social origin are more likely to be found in fields with better labour market returns (Italy: Triventi et al., 2017; Canada: Zarifa, 2012). It could be argued that any social segregation of undergraduate students across fields of study may turn these fields into *channels* through which social origin affects the probability of expecting postgraduate enrolment because such fields of study may provide a better springboard for access to postgraduate education due to their prestige or how demanding they are. Besides, a peer effect resulting from social segregation into field of studies may reinforce the social-origin impact of field of studies on the willingness to enrol in postgraduate education upon bachelor's degree completion.

Yet, there are also theoretical reasons to argue that fields of study that may be regarded as weak in terms of their labour market performance are more likely to work as channels of the effect of social origin on expectations of postgraduate enrolment. First, undergraduate students from a more privileged social origin may feel freer to choose a degree that satisfies their tastes despite its higher risks in terms of labour market performance: 'children of high-SES parents are more likely to choose non-vocational field of study, such as arts and sciences, which enriches their cultural capital and increases the likelihood of advancing to graduate school' (Oh & Kim, 2020, p. 4; see also Goyette & Mullen, 2006), whereas children from a low-SES background are more

constrained by the risk involved in their choice, and thus more inclined to choose degrees that ensure good labour market entry on their own. This is so because a bachelor's degree may be the definitive educational investment for them, whereas for undergraduates from a high-SES background it may not be the last investment of this kind. This dynamic would lead to a paradoxical over-representation of undergraduates from a high SES background in fields of studies with relatively lower labour market returns at the bachelor's level and a higher need of postgraduate education as a complement.

Moreover, there are systems of higher education where university candidates are distributed into different degrees according to the marks obtained in upper general education, on a specific university-entry exam, or according to a combination of the two. In this case, degrees that are more demanding (due to their prestige or their more promising labour market entry) require higher marks. This is the case of the Spanish system of higher education (see below). Due to a presumed primary effect of social origin on grades in upper secondary general education (or on grades obtained on the specific exam for university entry), students from an upper social background may get better access to fields that *do not require* further training (master's degree) in order to improve their chances at entry into the labour market. Following the reasoning in the paragraph above, this would lead fields of studies that are strong in terms of labour market performance not to be channels of an eventual effect of upper social background on the probability of expecting entry into a master's programme. If anything, weak fields would be a better channel than strong ones.

The forces that have just been exposed may cancel each other. On the one hand, students from an upper social background may be over-represented in fields that are weak in terms of labour market performance, precisely because these students are less risk averse (Hartog et al., 2002) and foresee this educational investment to be complemented by a master's degree, On the other hand, students from a lower social background may be over-represented in these fields due to the fact that entry requirements are lower and, even if they are riskier in labour market terms, the programmes are less demanding and entail lower dropout risk or shorter effective time for completion. In sum, it is uncertain, first, how undergraduate students are concentrated into fields of studies according to their social origin and, second, how weak or strong fields act as springboards for master's level enrolment.

Hypothesis 2. Fields of studies are not expected to mediate any eventual effect of social origin on expectations of postgraduate enrolment among undergraduate students.

The role of field of studies as a moderator of the association between social origin and access to postgraduate education is clearer than its role as mediator. Its role as moderator entails that the effect of social origin on the likelihood of expecting postgraduate education varies across fields of studies. Whatever the distribution of undergraduates across fields of studies by social origin, it is reasonable to think that the effect of social origin will be stronger precisely in fields with lower returns in the labour market (in terms of employment, wages, or occupational prestige). Students from a more advantaged social background in these fields would have the parental resources (economic, cultural) and motivation to complement their bachelor's degree with a master's degree in order to avoid any risk of social demotion derived, for instance, from a higher risk of overeducation (educational mismatch) associated with those fields. This may be particularly important in countries with a high rate of overeducation among university graduates. Thus, in these fields (e.g., Humanities), social origin may make a difference in terms of expectations of master's degree enrolment to a greater extent than it does in other fields of studies whose labour market returns are immediately more promising or secure. Conversely, in fields that guarantee better labour market access without the need to be complemented by a master's degree and possibly require better grades at entry and are more demanding, the probability of expecting a master's degree upon graduation, although still lower among students from a lower social background, may not be so different from the equivalent expectation among students from an upper social background.

Hypothesis 3. Controlling for educational performance, the effect of social origin on expectation of postgraduate enrolment is stronger in fields of studies with lower labour market returns (weak fields) than in fields of studies with higher returns (strong fields).

2.3. Primary and secondary effects of social origin (grades)

Following Boudon's (1974) study on primary and secondary effects of social origin, a possible effect of social origin on grades ('primary effect' of social origin) would already fuel higher expectations. If undergraduate students from an upper social origin get higher grades ('primary effect'), they may be better positioned to compete for access to master's programmes than undergraduate students from a low social origin. Contrary to Mare's (1981) and Stolzenberg's (1994) initial findings, there is evidence of such a primary effect of social origin during higher education for Germany (Neugebauer et al., 2016) and Norway (Hansen & Mastekaasa, 2006). One reason for the existence of a primary effect of social origin at such a late stage in the educational trajectory is that low-SES students are more likely to feel the need to make work and study compatible, in order to fund their studies, than are high-SES students. This may take a toll on the academic performance of the former, causing interruptions or delays in progression that undergraduates from an advantaged social origin are not so likely to suffer from (Goldrick-Rab, 2006).

Hypothesis 4. The effect of social origin on expectation of postgraduate enrolment is explained by educational performance during undergraduate studies.

Controlling for marks and field-of-study choice, though, there may also be a 'secondary effect' of social origin on expectations of postgraduate graduation. This secondary effect comes from a different evaluation of the costs, benefits, and risks associated with postgraduate education across different social origins. Part of this difference may be rooted in the financial security of undergraduates' parental background, particularly relevant in systems of higher education where funding mostly comes from the family of origin. Regarding benefits, for students from a lower social background, investing in a bachelor's degree may be enough to guarantee an equal or even better labour market situation than was the case for their parents, whereas for students from an upper social background, it may not be sufficient, given a context in which bachelor's degrees have become more generalised. This may create an incentive for the latter to enrol in postgraduate education, precisely as a way of keeping a competitive edge at entry into the labour market.

Within the realm of 'secondary effects' of social origin, another element to consider is the transmission of the importance of postgraduate education for future labour market career from parents to children. Students whose parents are college graduates themselves are 'more aware of the importance that advance degrees play in one's occupational life and labor-market opportunities than their first-generation counterparts' (Pascarella et al., 2004, p. 277). In other words, beyond considerations of cost and benefit, students from an upper social background benefit from information on the advantages that master's programmes entail—information that their milieu provides them and that may help them to choose among different master's programmes.

Hypothesis 5. Net of educational performance and field-of-study choice, undergraduate students from an upper social background would be more likely to expect master's programme enrolment upon bachelor's degree graduation than undergraduate students from a lower social background.

2.4. Compensatory advantage of social origin (grades as moderator of social origin effect)

Low academic performance may not have the same effect on educational expectations among individuals from different social backgrounds. Poor academic performance may be less decisive for future educational investments and transitions for students from a more advantaged social origin, due to compensatory mechanisms that reduce the risk associated with lower academic performance for them (Bernardi, 2012, 2014; Bernardi & Triventi, 2020; Bernardi and Valdés, 2021). Thus, expectations of postgraduate enrolment would be less dependent on grades or academic performance among undergraduate students coming from a higher social background than among students coming from a lower social background.

Quite interestingly, the possibility of a compensatory advantage along the educational trajectory has been explored for educational stages prior to higher education, but not much for higher education. And the less abundant literature applying the concept of compensatory advantage to higher education has mostly focused on explaining different paths of entry into higher education (direct access versus access through upper vocational training), different fields of study, or university dropout (Bernardi, 2012; Herbaut, 2021). Little research has been done on the possible existence of a compensatory advantage also in the transition to postgraduate education (master's level).

In principle, once the university level is reached, there may not be much need for a compensatory advantage. Reaching university and getting a bachelor's degree is often portrayed as the top of the educational trajectory. Thus, social demotion avoidance, which inspires compensatory advantage (parents of higher social background mobilising resources so that their offspring's educational performance becomes less consequential or transcendent), may not be so important once higher education is completed. However, in many systems of higher education, credential devaluation has lowered the utility of bachelor's degrees (*author*). In these circumstances, it may be necessary to compensate for the effect of lower grades in an educational trajectory that, for students from an upper social background, is not complete until a complementary degree guarantees social reproduction. In Herbaut's (2021) words, 'most of the literature has focused on younger students and discussed parental investments during secondary education such as private lessons, parental help with homework or school choice, but parental resources may also be mobilised at the higher educational level' (p. 384).

Hypothesis 6. Controlling by field-of-study choice, the effect of academic performance on expectation of postgraduate enrolment is weaker for undergraduate students from an upper social background than for undergraduate students from a lower social background.

3. Country, data, and methods

3.1. Country

The Spanish system of education is relatively highly standardised and lowly stratified. Students follow a common educational itinerary till age 16. Then, they can choose between a vocational training track (*Ciclos Formativos de Grado Medio*) and an academic one (*Bachillerato*), which naturally leads to university at age 18 (Teese et al., 2006). Quite unfortunately, Spain shows one of the highest rates of early school dropout (abandonment of the educational trajectory before upper secondary education is completed) (Fernández-Mellizo and Martínez-García, 2017). This premature abandonment of the educational trajectory is explained to a large extent by social background, depressing the equality of educational opportunities that the whole system, in its high standardisation and low stratification, can provide. Among those who stay in the educational trajectory after 16, although the appeal of vocational training is increasing lately, most students choose the academic track. After successfully completing upper secondary general education, they should take a state exam to gain access to university (*Pruebas de Acceso a la Universidad*). The grade obtained on this exam, along with the average grade in upper secondary general education, quite often guarantees a place at university (the pass rate is quite high), but it may preclude access to the desired degree, because the minimum grade for entry into a given degree programme depends on how demanded that degree is in a given year (see below). There is also the opportunity of getting access to university after the completion of an upper vocational programme (*Ciclo Formativo de Grado Superior*). A relatively high level of standardisation, a relatively low level of stratification, and relatively low selectivity in access to university work in the direction of favouring higher equality of opportunities of access to university than in other systems of education; yet, other elements like the outstandingly high rate of early school dropout, which leaves behind a good number of students from a lower social background, counteract the traits of the Spanish system of education that favour equality of opportunities by social origin. All in all, although the system of higher education in Spain has been found to improve its equality of educational opportunities over time relative to other countries like Italy (Di Paolo, 2012; Teese et al., 2006), the equality of educational opportunities of access and graduation has generally been found relatively stable over time (Fernández Mellizo-Soto, 2022) and not as promising as the expansion of higher education in the last decades of the previous century would incline to think.

Beyond access to university, there are a number of reasons why Spain constitutes an interesting case for the analysis of social origin effects on undergraduates' expectations to pursue postgraduate education. First, the Spanish system of higher education is classified as a 'Low Tuition/Low Subsidies' regime in Garritzmann's (2016) typology of regimes of higher education finance. Compounded with the role played by the family in terms of contingency coverage in familialistic welfare regimes, the family still plays a particularly strong role in the coverage of direct and indirect costs derived from long education trajectories in Spain[1] (Gines-Mora & García, 1999).

Second, as a result of cutbacks in higher education public expenditure during the Great Recession (2008), there was a higher increase in fees for master's degrees than for bachelor's degrees. Whereas the price of the ETCS credit[2] at the bachelor's level went from 10.8 to 14.7 euros between the academic years 2009–2010 and 2013–2014, the average price for the ECTS credit at the master's level went from 20 to 36.8 euros in the same period. In some regions included in the analysis (see below), the relative growth of fees at the master's level was even higher (Escardibul et al., 2017). This difference in the increase of fees between the bachelor's and master's levels could have reinforced the inequality of opportunities by social origin in the transition from bachelor's to master's programmes, which is the substance of the present research.

Third, unlike other systems of higher education, the prestige of university degrees in Spain is still more closely associated with fields of studies than with institutions. In other words, universities still rank fairly equal in terms of prestige, relative to what happens in the UK or the US. Regarding access to fields of studies at university in Spain, it is important to note the role of the mark obtained in a general state-level exam, which takes place at the beginning of the summer prior to university entry. Depending on the grades in upper secondary education, and the additional grades obtained in a state-level exam that grants access to university, students may or may not gain access to fields of

[1] As a sign of this role, 60.6% of the sample of university students in the survey used for the study declared that they still live with their parents.

[2] ECTS stands for European Credit Transfer and Accumulation System, a system derived from the Bologna Reform to establish units of skills and/or competence attainment transferable across countries that applied such reform: https://ec.europa.eu/education/resources-and-tools/european-credit-transfer-and-accumulation-system-ects_en

studies of their choice. Every year, bachelor's degrees at each university generate minimum marks to get access to them. These minimum-access grades (marks) are a function of the demand for each degree in that year. Thus, highly demanded degrees will have higher entry marks. This imposes constraints for the study of the mediatory and moderator role of academic performance that will be explained below.

Finally, Spain is one of the countries with the highest rates of overeducation among university graduates (Barone & Ortiz, 2011; Davia et al., 2017; Verhaest & van der Velden, 2013). This implies a risk of social demotion for undergraduate students from an upper social origin, which may, in turn, stimulate dynamics of acquisition of further educational credentials among these students.

3.2. Data

In 2018, the Vives Network (*Xarxa Vives*), constituted by universities of three Spanish Autonomous Communities (Catalonia, Valencia, and Balearic Islands) plus Andorra, carried out a survey (Via Universitaria II) aimed at exploring the profile, conditions of study, and level of satisfaction among university students in this territory (Ariño et al., 2019). Via Universitària II replicates the design and content of Eurostudent, a well-established European-wide periodical survey among university students of a group of 26 EHEA countries in which Spain is unfortunately not included. Given the relatively small size of the universe (university students of four territories) and the collaboration of the different universities involved in the network (Xarxa Vives), Via Universitària II attempted to contact *all* students in the territories covered by the survey; in other words, rather than building a representative sample of this population, the whole population was invited to participate, as it is customary in Eurostudent surveys. The response rate (14.2% among undergraduate students) was well above what is usual in Eurostudent surveys, and the error margin (0.4) markedly low. The representativeness of the final pool of respondents in terms of field of study, gender and age was confirmed by the technical staff responsible of the survey. On the basis of that, as informed by the technical support staff, no weights were generated for accounting for non-response.

Given the size of the university population in these areas, and its relative weight in relation to the university population in Spain as a whole,[3] conclusions of our study can be reasonably extrapolated to other Spanish regions.[4] The survey includes information about students' social background, including father's and mother's education and occupation. It also includes information on academic progression (number of ECTS credits obtained to date by the interviewee), field of study, educational performance, and grade at entry into university.

Our dependent variable is the expectation of continuing postgraduate studies and is based on the answer to the following question: 'What do you expect to do when you finish your current studies?' Answer options are 'Doing another BA degree', 'Doing an MA or PhD', 'Other studies', 'Looking for a job', 'Enjoying a sabbatical', or 'Not decided yet' (see descriptive statistics in Table A1 and Figure A1). Our key independent variables capturing socioeconomic origin are father's and mother's education and father's and mother's occupation. The categories of both father's and mother's education are 'No degree', 'Primary education', 'Lower secondary', 'Upper secondary general', 'Upper vocational', 'University (1st and 2nd cycles)' and 'PhD'. In order not to prioritise either mother's or father's education and provide a joint view of the educational resources that could act in support of a lengthening of the student's educational trajectory at the family level, a dominance approach has been followed, so that the highest educational attainment among the parents is assigned to the student (Korupp et al., 2002; Marks, 2008).

The categories of both father's and mother's occupation are 'Managers and professionals',[5] 'Associate professionals', 'Clerks', 'Service workers', 'Small employers (fewer than 10 employees), 'Skilled industrial workers', 'Unskilled industrial workers', and 'Elementary occupations'.[6] Following the study by Buis (2013) on the influence of mother's and father's occupational resources in the Netherlands, and as a way of preventing the loss of observations and restricting the analysis just to parental couples whose members are both working, 'Never worked' was included at the bottom of this occupational scale. A similar dominance approach was applied to student's parental occupation; that is, the student was assigned the highest parental occupation among parents, considering that the above list of categories roughly constitutes a hierarchy.[7]

Students' educational performance is captured by the average grade in the ECTS credits attained so far by the student in his/her university trajectory (in 0–10 scale). This information was anonymously provided by the universities that participated in the survey. Grade at entry was retrospectively reported by the student. Finally, the field-of-studies variable includes the following fields: 'Humanities', 'Social Sciences', 'Natural Sciences', 'Health Sciences', and 'Engineering and Architecture'. The strength of these fields can be approximated by their unemployment or inactivity rates, their overeducation rate, and the job security and average wage they facilitate at entry into the labour market. Table 1 shows the employment, unemployment, and inactivity rates of university graduates (bachelor's degrees) three years after graduation (which happened in the academic year 2015–2016) in one of the regions covered by the survey (Catalonia). It also shows the job security (percentage of respondents with permanent contract), overeducation (percentage declaring that they hold jobs not corresponding to a university graduate), and the average wage (gross monthly earnings in euros, as declared by the interviewee). We assume cross-field variation in employability to be similar in the other two regions considered in our analysis (Balearic Islands, Valencia). As could have been reasonably expected, Humanities can be regarded as the weakest field in terms of employability, and Engineering and Architecture as well as Health as the strongest ones.

Expectation of postgraduate enrolment may be affected by the student's progression towards the completion of the bachelor's degree. Awareness of the need to complement the training received during the bachelor's degree may grow as completion gets closer, especially in fields of studies whose labour market entry performance is weaker. This is the reason why academic progression (number of ECTS credits obtained so far) is included as a control, along with gender, in the first step of the analysis. Subsequent analyses for testing Hypotheses 2–4 add field of studies and academic performance as possible mediators/moderators of the eventual effect of social origin on postgraduate enrolment expectation (see below). The analytical sample is defined by the absence of missing values in either the dependent or the independent variables in

[3] In the academic year 2018–2019, the students enrolled in any university degree programme in these three Autonomous Communities constituted 23.5% of the total number of university students in Spain overall (Spanish Ministry of Science, Innovation and Universities, 2019, p. 26).

[4] For the same academic year, the Via Universitària survey was carried out (2018–2019). Figures A2 and A3 (Appendix) show the distribution of undergraduate students by field of study and highest parental education in the whole of Spain and in the area covered by the survey. As we can see in Figure A2, the distribution by field of study is similar in these two geographical areas. In the case of highest parental education, though, the percentage of students with two highly educated parents is slightly higher in Spain as a whole (33%) than in the area covered by Via Universitària II (26%). The distribution becomes almost equivalent if we consider Spain as a whole and just Catalonia, one of the three Spanish regions in Via Universitària (results upon request).

[5] This includes company owners with more than 10 employees.

[6] This classification of occupations, directly offered by the survey, is based on ISCO (Ariño et al., 2019).

[7] Given the low number of students for whom both parents are declared as 'Never work', such a category was merged with 'Elementary' in the resulting variable conveying the highest parental occupation.

Table 1
Employment, unemployment and inactivity rate among Catalonian university graduates who graduated in academic year 2015–2016 and were interviewed three years after graduation (2020). (2020 Graduate Survey, carried out by the Catalonian Agency of Higher Education; weighted estimations).

	Employment rate	Unemployment rate	Inactivity rate	Job security (1)	Overeducation (2)	Average wage (3)
Simple classification						
Humanities	82,3%	10,6%	7,1%	50%	30%	1649
Social Sciences	89,8%	6,1%	4,1%	60%	10%	2016
Natural Sciences and Maths	85,7%	8,6%	5,6%	50%	20%	1993
Health	92,3%	4,0%	3,7%	40%	10%	2079
Engineering and Architecture	93,2%	3,8%	2,9%	70%	10%	2586
Detailed classification						
Philosophy and History	75,3%	17,0%	7,8%	40%	40%	1553
Literature and Languages	89,1%	4,7%	6,2%	50%	20%	1710
Art and Design	82,0%	10,2%	7,8%	60%	20%	1674
Economy, Business, Tourism	92,6%	4,0%	3,5%	80%	10%	2379
Law, Political Science and Sociology	84,8%	8,0%	7,2%	60%	20%	1978
Communication and Documentation	87,2%	9,7%	3,1%	60%	20%	1800
Education	91,7%	5,7%	2,6%	30%	10%	1538
Social Work	92,2%	4,5%	3,3%	50%	10%	1622
Biology and Natural Sciences	83,1%	10,6%	6,3%	40%	20%	1870
Experimental Sciences and Maths	90,2%	5,3%	4,5%	50%	10%	2169
Nurse	93,6%	3,4%	3,0%	40%	10%	1871
Psychology	84,3%	9,1%	6,6%	40%	20%	1623
Medicine and Biomedical Sciences	95,9%	1,2%	3,0%	50%	0%	2663
Architecture and Construction	91,5%	4,8%	3,7%	50%	10%	2189
Industrial Engineering	93,1%	4,4%	2,5%	80%	10%	2677
Telecommunication and IT	94,9%	1,8%	3,3%	80%	10%	2922
Other Engineering (agriculture, forestry…)	93,6%	3,9%	2,5%	60%	10%	1880

Source: 2020 Graduate Survey, Catalonian Agency of Higher Education; weighted
(1) Job security: % of respondents with permanent contract
(2) Overeducation: % of respondents declaring that they hold jobs below the university level
(3) Monthly wage in Euros (gross)

each one of the analyses.

3.3. Methods

Multinomial logistic regression was used for the analysis of expectations of postgraduate enrolment among respondents who were undergraduate students at the time of the interview. Logit coefficients in multinomial logit models are difficult to interpret and compare across models (Breen et al., 2018; Mood, 2010). They should be read in light of the outcome that works as a reference category in the dependent variable, and such an interpretation should account for the probability of other outcomes. For this reason, we prioritise the presentation of the average marginal effects (AMEs) of our key independent variables (highest parental education or occupation) on our main outcome of interest ('Doing an MA/PhD'). Unlike logit coefficients or relative risk ratios (RRRs), the interpretation of AMEs does not require any reference to the reference category in the dependent variable (Wulff, 2015). Yet, due to the intrinsic interest of comparing the effect of highest parental education/occupation on the probability of expecting master's programme enrolment with *their effect on the expectation of direct labour market entry*, we also show the AMEs of our key independent variables on direct labour market entry ('Looking for a job') and the RRRs associated with 'Doing an MA/PhD' or 'Looking for a job'. For reasons of space, RRRs will be presented only as supplementary online material.

'Looking for a job' is chosen as a point of comparison among the possible expectations declared by the undergraduate student because, among the range of possible answers to what to do upon graduation, 'Doing an MA or PhD' and 'Looking for a job' are the extremes in the range of decisions that may be derived from social origin when undergraduate students are about to finish their studies. Undergraduate students from a disadvantaged social background may have reasons to consider that, in terms of social mobility, the bachelor's degree soon to be attained already offers them more than their point of departure in terms of social origin; moreover, those students may be financially constrained for any other options than direct labour market entry ('Looking for a job'). In terms of risks, opportunities, and probability of success (secondary effect of social origin), 'work' may be more rational than enrolling in a postgraduate programme, which may be deemed as riskier.[8]

We prioritised the initial treatment of the dependent variable because we are interested in exploring the social determinants of an *upward* educational mobility, and MA/PhD programme entry constitutes such a move, relative to 'Other studies' or 'Doing another BA degree'. Yet, considering the possibility that 'Other studies' actually conceal a blurred, undefined idea of what to do afterwards, to be eventually settled on doing a master's, a sensitivity analysis was carried out merging 'Doing an MA/PhD' and 'Other studies' in the dependent variable. An additional robustness check was performed by merging into one all the categories that entail study continuation.

To test Hypothesis 1, the initial analysis only includes gender and progression as control variables. In a second stage of the analysis, other variables are incorporated depending on the mechanism (field of studies

[8] Figure A1 (Appendix) shows the distribution of undergraduate students' responses to the question 'What do you expect to do when you finish your current studies?' by highest category of parental education. As expected, there is a clear social gradient in the expectation of 'Doing an MA/PhD' and 'Looking for a job'. Regarding 'Doing an MA/PhD', this option was chosen by 59% of those whose highest parental education was a PhD, whereas it was only chosen by 44% of students whose highest parental education was either 'No studies' or 'Primary studies'. Opposite to that, 'Looking for a job' was chosen by 24% of those whose highest parental education was either 'No studies' or 'Primary students', and only by 15% of those whose highest parental education was a PhD. Certainly, there is some social gradient in the preference for 'Non-decision' as well. The fact that students from a more disadvantaged origin are more likely to choose this option may be due to the fact that they lack information about options available to them after graduation, which is more available to students from a more advantaged social origin. In other words, it would be a sign that undergraduate students from a more advantaged social origin have better access to sources of information about what to do after graduation. Due to the indefinite nature of this response in terms of a possible scale of educational mobility, this category was initially disregarded from the main analysis, but it has been considered for some robustness checks (see below).

or academic performance) whose mediatory and moderator effect are to be tested. Thus, for assessment of the mediation and moderation role of field of studies, academic performance (grades) was introduced as a control. The objective was to assess the eventual mediator/moderator role of field of studies after controlling for academic performance *during the career*. Quite unfortunately, academic abilities and motivation may already be captured by fields of studies themselves, given that grades at entry are an important mechanism of distribution of university candidates across fields of study in higher education in Spain. A robustness check of the analysis of the mediator and moderator role of field of studies was carried out including grade at entry as an additional control (see below). The analysis of the mediatory role of field of studies only consists of the introduction of field of studies in the model in order to see if it produces any meaningful reduction of the eventual effect of any of the dimensions of social origin considered. In the case of moderation, an interaction effect between each of these dimensions and the variable capturing field of studies is considered.

For assessment of the mediatory and moderation role of academic performance, field of studies is introduced as a control. The mediatory role of academic performance actually constitutes the 'primary effect' of social origin, as conceived by Boudon (1974). The existence of a residual effect of social origin on the probability of expecting postgraduate enrolment instead of straightaway labour market entry, after introducing grades (academic performance), should be regarded as evidence of the secondary effect of social origin discussed above. Finally, the role of academic performance as a moderator of social origin (i.e., the possibility that effect of academic performance varies across levels of social origin) captures a possible compensatory advantage of undergraduates from a more privileged background, which inspires Hypothesis 5.

3.4. Robustness checks

As has been said before, in the Spanish university, grade at entry is a key mechanism for the distribution of university candidates into different bachelor's degree programmes. Thus, introducing it into the analysis may deprive fields of studies from part of the possible mediatory/moderator role in the association between socioeconomic origin and expectation of postgraduate enrolment to be explored. Besides, as argued in the theoretical section, there may be a lingering primary effect of social origin on students' educational performance in upper general education and ultimately on the grade obtained for getting access to university. These are the reasons why grade at entry was initially avoided in the main analysis, which only included students' academic performance at university as a control. At the same time, grade at entry (in a 5–14 scale[9]) may reflect cognitive abilities, drive, and preparation that may also condition access to postgraduate training, similar to academic performance. A robustness check was performed introducing grade at entry as an additional control.

A second robustness check was carried out considering a more detailed version of fields of study, in case any moderation effect is concealed by overly broad categories in the initial field-of-studies variable, particularly among fields of study that are quite large or with presumed heterogeneity in terms of quality of labour market entry across the degrees constituting the field. This may be particularly so in the case of social sciences and health. The detailed version of the variable considers the following fields: 'Humanities', 'Economy, Business and Tourism', 'Law and Other Legal Degrees', 'Sociology and Political Science', 'Journalism and Communication', 'Education', 'Other Social Sciences', 'Natural Sciences' 'Medicine and Odontology', 'Health (others)', and 'Engineering and Architecture'.

Finally, as a robustness check of the mediation analysis carried out by the simple comparison of AMEs in models with and without any one of the two variables potentially mediating the effect of socioeconomic origin, the Karlson–Holm–Breen (KHB) decomposition approach was applied to our data (Breen et al., 2018; Kohler et al., 2011). KHB decomposition approach allows the decomposition of the total effect of a variable (in our case, either the highest parental education or occupation) into its direct and indirect effects (through field of studies or grades) on the expectation of postgraduate enrolment, relative to straightaway entry into the labour market. This method allows us to ascertain whether the eventual indirect effect of field of studies and grades is statistically significant.

4. Results

4.1. Expectation of master's enrolment

Tables 2 and 3 show the average marginal effect (AME) of highest parental education and occupation on undergraduate students' probability of expecting postgraduate enrolment (first column of each model, in black) and direct labour market entry (second column of each model, shaded in grey) upon completion of their bachelor's degree. On average, undergraduates with at least a parent with postgraduate education herself or himself have a probability of declaring an expected postgraduate enrolment almost 15% points higher than undergraduates whose parents have primary education at most (reference category[10]) (Table 2, Model 1, 1st column). Undergraduates with a managerial or professionally employed parent have a probability of expecting postgraduate enrolment almost 9% points higher than undergraduates whose parents are at most workers in elementary occupations (reference category) (Table 3, Model 1, 1st column). The effect of parental occupation turns out to be smaller than that of parental education, but it goes in the same direction as expected. These effects come after controlling for gender and academic progression.

Quite interestingly, the sign of the effect of parental education or occupation on the probability of expecting direct labour market entry ('Looking for a job') is just the opposite: undergraduates with at least a parent with postgraduate education herself or himself have a probability of expecting to be straightaway looking for a job upon graduation that is almost 9% points lower than in the case of undergraduates whose parents have primary education at most (Table 2, Model 1, 2nd column), and undergraduates whose parents are professionals or managers are 5% points less likely to expect straightaway labour market entry than undergraduates whose parents are workers in elementary occupations (Table 3, Model 1, 2nd column). The RRRs of the coefficients corresponding to the categories of highest parental education or occupation in the multinomial logit models behind these analyses (see Tables A1 and A2 in the Supplementary Online Appendix) reveal that the relative risk of expecting master's enrolment instead of direct labour market entry steadily increases as we move up in the scale of highest parental education or occupation. Thus, from no difference between the risk of expecting master's enrolment or looking for a job among undergraduates in the lowest category of parental education, the relative risk of master's enrolment instead of looking for a job increases by a factor of 2.12 among a student with at least a postgraduate parent relative to a student whose parents have at most primary education

[9] The grade that allows access to university in Spain ranges from 5 (pass) to 14.

[10] Given the very low frequency of individuals whose parents are both non-educated ('No studies'), the next category ('Primary') was chosen as the reference category in the parental education variable.

Table 2
Multinomial logit model of plans after BA graduation among undergraduate students (Via Universitària).

	Model 1		Model 2 + Field of studies		Model 3 + Grades		Model 4 + FoS + Grades	
	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job
No studies (ref.cat: Primary)	-0.002	-0.001	-0.001	-0.003	0.003	-0.005	0.005	-0.007
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Lower secondary	0.058 * **	-0.034 * *	0.053 * **	-0.032 * *	0.060 * **	-0.036 * *	0.055 * **	-0.034 * *
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Upper secondary + lower vocational	0.080 * **	-0.051 * **	0.073 * **	-0.049 * **	0.082 * **	-0.053 * **	0.074 * **	-0.050 * **
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Upper vocational	0.095 * **	-0.061 * **	0.089 * **	-0.061 * **	0.098 * **	-0.063 * **	0.091 * **	-0.062 * **
	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
University (BA / MA)	0.122 * **	-0.079 * **	0.112 * **	-0.079 * **	0.122 * **	-0.080 * **	0.110 * **	-0.078 * **
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
PhD	0.148 * **	-0.087 * **	0.143 * **	-0.088 * **	0.147 * **	-0.086 * **	0.141 * **	-0.087 * **
	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Social Sciences (ref.cat: Humanities)			-0.099 * **	0.088 * **			-0.092 * **	0.085 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Natural Sciences			0.066 * **	-0.001			0.079 * **	-0.007
			(0.01)	(0.01)			(0.01)	(0.01)
Health Sciences			-0.098 * **	0.104 * **			-0.095 * **	0.104 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Engineering & Architecture			-0.031 * *	0.101 * **			-0.007	0.087 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Average grade (academic certificate)					0.029 * **	-0.023 * **	0.034 * **	-0.023 * **
					(0.00)	(0.00)	(0.00)	(0.00)
Progression (number of attained ECTS credits)	-0.004 * *	0.000 * *	-0.004 * **	0.001 * **	-0.004 * **	0.001 * **	-0.004 * **	0.001 * **
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.0)	(0.00)
BIC	89730		89123		89607		89607	
AIC	89350		88532		89185		89185	
N	34,454		34,454		34,454		34,454	

Statistical significance: * $p < 0.05$ * * $p < 0.01$ * ** $p < 0.001$
Average marginal effect of HIGHEST EDUCATIONAL ATTAINMENT AMONG PARENTS on expectation of 'Doing a MA/PhD' and on expectation of 'Looking for a job'. Results for other categories in dependent variable ('Other BA', 'Other studies', 'Sabbatical', 'Non-decided') are omitted. Standard error in brackets; control for gender in all models.

(reference category in the parental education variable), given that other variables in the model are held constant.[11] And the corresponding increase is 1.55 among students who are offspring of professionals or managers relative to students whose parents have an elementary occupation at most.

Such an effect of social origin on expectation of master's enrolment after controlling for gender and academic progression does not seem to be mediated by either field of studies or academic performance. The AME of highest parental education when field of studies (Model 2) or grades (Model 3) enters into the analysis is not substantially reduced relative to Model 1 (Table 2). Nor do we see that the AME of highest parental occupation is substantially reduced when field of studies or grades are considered (Models 2 and 3, Table 3). In sum, as expected in Hypothesis 2, we do not find any evidence that the effect of social origin on the expectation of postgraduate enrolment is mediated by field of studies. Yet, unlike the expectation formulated in Hypothesis 4, the effect of social origin is not mediated by academic performance either. In other words, we do not find much evidence of a primary effect of social origin on the expectation of postgraduate enrolment.

The application of the KHB decomposition method to our data (Tables A2 and A3, Appendix) confirms the lack of any mediation effect of either field of studies or grades in the association between socioeconomic origin and expectation of postgraduate enrolment. The effect of being in one of the categories of highest parental education (Table A2) or occupation (Table A3) is almost identical when only highest parental education or occupation is considered in the analysis (reduced model, equivalent to Model 1 in Tables 2 and 3) or when any of the possible mediators (field of studies or grade) is added to the analysis (full model). The difference between the average partial effect in the reduced and full models represents this mediation effect, and such a mediation effect is never higher than one percentage point. If either field of studies or grades mediate the effect of social origin (parental education or occupation) on expectation of postgraduate enrolment, such a mediation is almost negligible and similar across categories of parental education and occupation.

The last model (Model 4) in Tables 2 and 3 shows the AME of highest parental education and occupation, respectively, once field of studies and grades are considered. The predicted probabilities of expecting master's enrolment corresponding to each category of highest parental occupation or education in Model 4 of each table are graphically presented in Figs. 1 and 2.[12] Although the effect of social origin is certainly stronger in the case of parental education than in the case of parental occupation, both graphs confirm Hypothesis 5. There is a residual effect

[11] For comparing the size of the effect between different categories of our dependent variable and independent variables, the interpretation of RRRs is less straightforward than AMEs, but RRRs demonstrate that both parental education and occupation have a statistically significant effect in increasing the probability of expecting master's enrolment *relative to labour market entry*. For reasons of space, tables with RRRs are only shown in the Supplementary Online Material.

[12] In the Supplementary Online Material, these predicted probabilities are compared with the predicted probabilities of 'Looking for a job' resulting from the same models (Supplementary Online Material, Figures A1 and A2).

Table 3
Multinomial logit model of plans after BA graduation among undergraduate students (Via Universitària).

	Model 1		Model 2 + Field of studies		Model 3 + Grades		Model 4 + FoS + Grades	
	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job	Doing a MA/ PhD	Looking for a job
Managers & professionals (ref.cat: Elementary/)	0.087 * **	-0.052 * **	0.081 * **	-0.053 * **	0.085 * **	-0.050 * **	0.078 * **	-0.051 * **
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Associate professionals	0.054 * **	-0.036 * **	0.048 * **	-0.036 * **	0.054 * **	-0.036 * **	0.046 * **	-0.035 * **
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Clerks	0.043 * **	-0.029 * *	0.035 * *	-0.027 * *	0.042 * **	-0.028 * *	0.033 * *	-0.026 *
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Service workers	0.030 *	-0.009	0.027 *	-0.008	0.030 *	-0.009	0.026 *	-0.008
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Small employers	0.037 * *	-0.016	0.033 *	-0.016	0.037 * **	-0.016	0.033 *	-0.016
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Skilled workers	-0.003	0.020	-0.005	0.019	-0.003	0.020	-0.006	0.020
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)
Unskilled workers	0.007	0.013	0.006	0.012	0.008	0.012	0.007	0.012
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Social Sciences (ref.cat: Humanities)			-0.100 * **	0.088 * **			-0.093 * **	0.085 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Natural Sciences			0.071 * **	-0.003			0.084 * **	-0.008
			(0.01)	(0.01)			(0.01)	(0.01)
Health Sciences			-0.099 * **	0.105 * **			-0.096 * **	0.105 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Engineering & Architecture			-0.027 *	0.099 * **			-0.003	0.085 * **
			(0.01)	(0.01)			(0.01)	(0.01)
Average grade (academic certificate)					0.028 * **	-0.023 * **	0.034 * **	-0.023 * **
					(0.00)	(0.00)	(0.00)	(0.00)
Progression (number of attained ECTS credits)	-0.004 * **	0.001 * *	-0.004 * **	0.001 * *	-0.004 * **	0.001 * *	-0.004 * **	0.001 * *
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
BIC	87387		86777		87274		86641	
AIC	86966		86146		86811		85967	
N	33,534		33,534		33,534		33,534	

Statistical significance: * $p < 0.05$ * * $p < 0.01$ * ** $p < 0.001$
Average marginal effect of HIGHEST OCCUPATIONAL ATTAINMENT AMONG PARENTS on expectation of 'Doing a MA/PhD' and on expectation of 'Looking for a job'. Results for other categories in dependent variable ('Other BA', 'Other studies', 'Sabbatical', 'Non-decided') are omitted. Standard error in brackets; control for gender in all models.

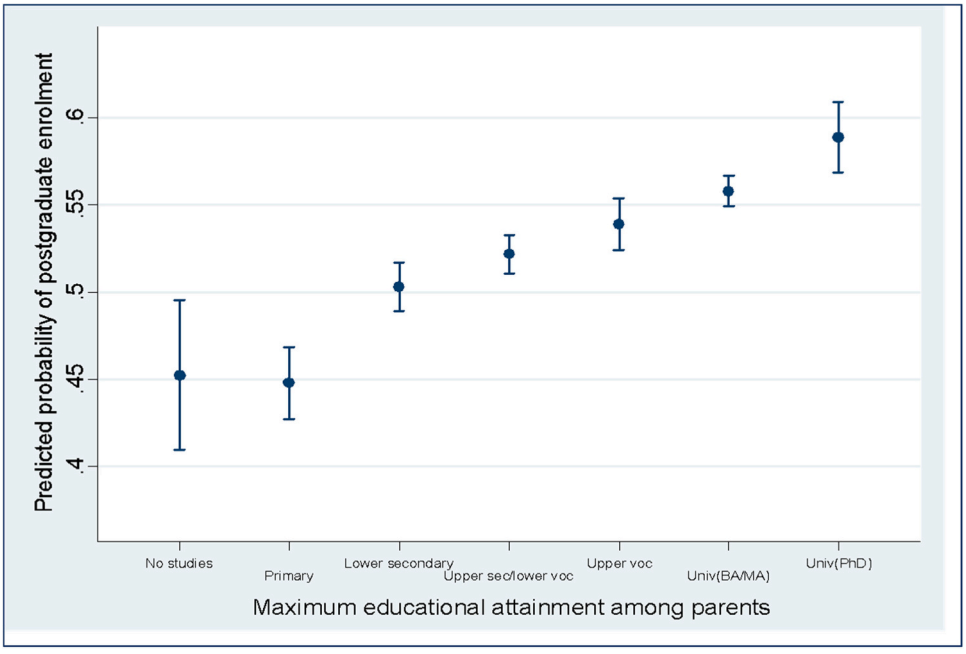

Fig. 1. Predicted probability of expecting 'Doing a MA/PhD' according to parental **education.**

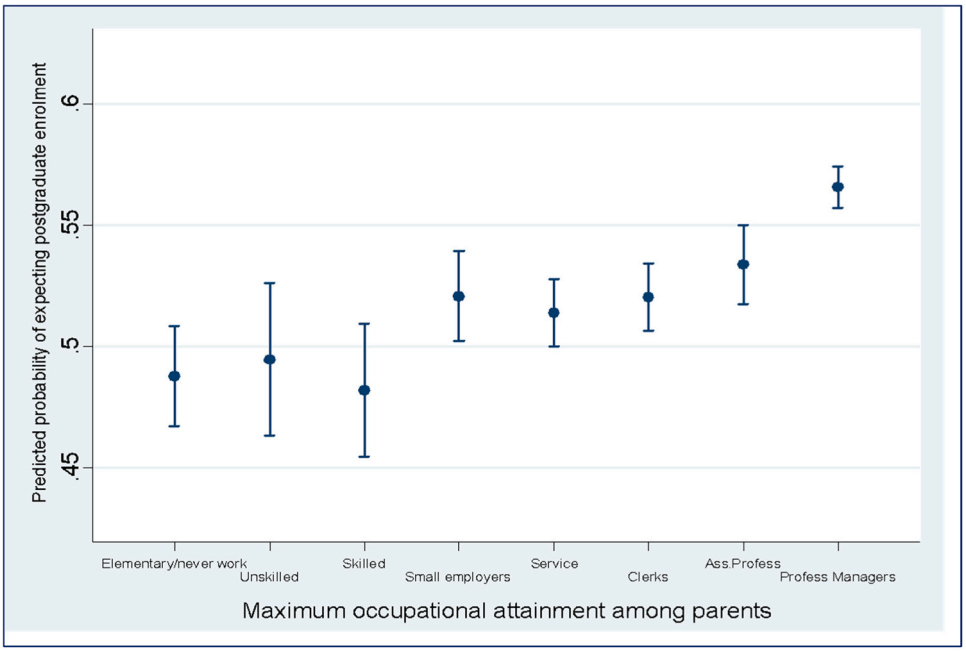

Fig. 2. Predicted probability of expecting 'Doing a MA/PhD' according to parental **occupation.**

of social origin (regardless if we look at parental education or occupation) that is not exhausted by grades or field-of-study choice and reveals a different reading of postgraduate educational investment—in terms of its cost, benefits, and probability of success—across levels of undergraduate students' socioeconomic origin.

4.2. Moderator effect of field of studies and academic performance

The exploration of a possible heterogeneous effect of socioeconomic origin (highest parental educational or occupational attainment) across fields of studies or grades entails the introduction of an interaction effect in the analysis, which considerably enlarges the corresponding tables. For reasons of space, instead of showing the predicted probabilities

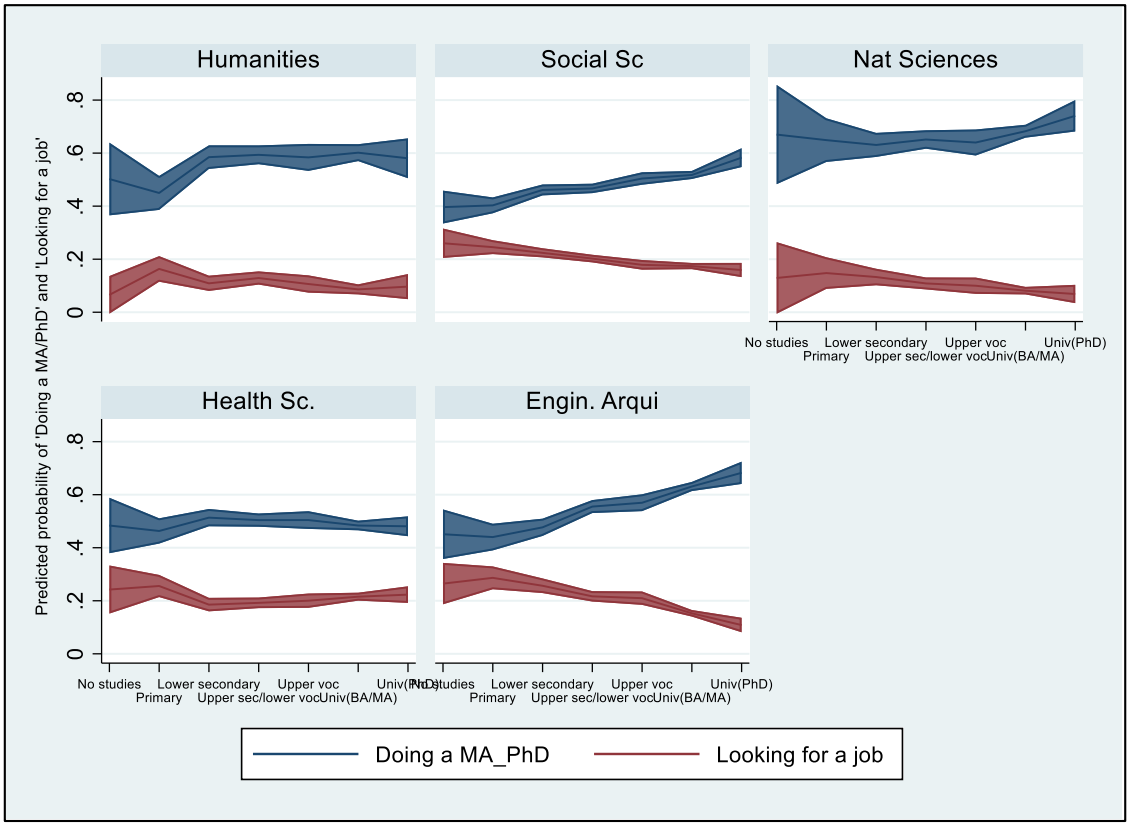

Fig. 3. Moderating effect of field of studies on master enrolment expectation and direct labour market (highest parental education).

corresponding to field of studies or grades for different categories of highest parental educational or occupational attainment to these interaction effects (available in Tables A3–A6, Supplementary Online Material), we just show here their graphical representation.

Figs. 3 and 4 show the predicted probabilities of expecting postgraduate enrolment and looking for a job corresponding to different categories of parental education (Fig. 3) and occupation (Fig. 4) for different fields of studies, once grades, progression, and gender are considered. Unlike what was initially expected (Hypothesis 3), the effect of social origin (either highest parental education or occupation) does not turn out to be stronger in fields of studies that may be considered as 'weak' in labour market terms (i.e., Humanities) vis-à-vis fields of studies whose labour market entry is more promising. On the contrary, one of the strongest fields of studies in terms of employability (Engineering and Architecture) is precisely the one where the probability of expecting postgraduate enrolment vis-à-vis labour market entry significantly increases as we move up in the scale of highest parental education and occupation. This is particularly noticeable in the case of highest parental education.[13]

This puzzling result may be explained by the licensing power with which master's programmes in technical degrees became endowed after the implementation of the Bologna Reform. Before the Bologna Reform, engineering and architecture in Spain were long degrees, of up to six years. They enabled graduates to formally engage in a number of engineering projects and plans. The Bologna Reform initiated a conflict within some professions associated with an engineering degree. The result of the conflict was that the professional entitlement for getting access to some jobs or projects was formally or informally reserved for graduates who attained a master's degree. The old, long bachelor's degree programmes were made equivalent to the addition of a master's diploma to a bachelor's degree in engineering (De Cuadra García, 2007). In other words, unlike other fields of studies, there is a credentialising premium associated with postgraduate attainment. In theoretical terms, we may say that the possible higher effect of social origin in some fields of study is associated not so much with their higher or lower labour market performance in general, as initially expected, but with the specific difference a master's degree makes in terms of the occupations or jobs it entitles an individual to within a profession, degree, or field.

Another strong field ('Health') deserves mention due to the relative low propensity of expecting postgraduate enrolment, which appears in both Figs. 3 and 4, and to the lack of the moderating importance of social origin, relative to 'Engineering and Architecture'. The surprisingly low probability of health undergraduate students to declare an expectation of postgraduate enrolment, vis-à-vis direct labour market entry, is possibly due to the idiosyncratic character of postgraduate studies in medicine. After bachelor's degree graduation, medical graduates should have access to publicly organised medical internships that entitle them to a medical specialty (surgeon, cardiologist, etc). These internships are regarded as postgraduate education, but, unlike most master's programmes, they are financially rewarded by the state. They come with a wage. Thus, when asked about their expectations upon bachelor's degree graduation, medical students are likely to consider gaining access to one of these internships as 'work', not as a mere lengthening of their education trajectory. This may also be the reason why social origin does not play any role here: first, all medical graduates need access to one of these internships if they want to practice (there is little room for working without them); second, they are postgraduate programmes that come with a wage and thus do not entail the economic risk associated with the payment of fees for a standard master's programme.

Moving now to the exploration of a possible heterogeneous effect of grades, graphs in Figs. 5 and 6 show, for different levels of highest parental education (Fig. 5) or occupation (Fig. 6), the predicted probability of expecting postgraduate enrolment and looking for a job corresponding to four possible average grades obtained so far by students at the time of the interview, once field-of-study choice, gender, and academic progression are accounted for. The effect of highest parental education (Fig. 5) or occupation (Fig. 6) seems more relevant as we move down in the scale of academic performance. For those with very good academic performance, the predicted probability of expecting master's enrolment upon graduation is systematically higher than direct labour market entry; parental education plays a minor role here. But, as we move to lower average grades, undergraduates with the highest parental education appear more resilient to bad grades in the expectation of master's enrolment and more systematically averse to direct labour market entry relative to students at lower levels of highest parental education. Although more subdued, this pattern is again perceived when considering highest parental occupation, especially among the grades that are more frequent in the sample (5 and 7) (Fig. 6).

All this confirms Hypothesis 6. Following the literature on compensatory advantage, it is reasonable to assume that undergraduate students from advantaged social backgrounds are shielded from the higher risk that lower grades entail for further educational investments by their social background, and that such an advantage, relative to undergraduate students from lower social backgrounds, still operates at such a late stage of the educational trajectory.

4.3. Other robustness checks: grade at entry, detailed field of study, and different specifications of the dependent variable

The probability of expecting master's enrolment may be explained by personality traits or cognitive abilities that are not exhausted by progression or academic performance during the bachelor's degree programme. Grade at entry into university may capture part of those personality traits or abilities. Although initially omitted from the analysis, due to a possible conflict with the effect of fields of study or grades on expectation of master's enrolment that we wanted to elicit (see above, section on Spain), grades at entry were added to the analysis in a robustness check whose results are presented in Tables A7 and A8 (Supplementary Online Material). As expected, grade at entry has a positive and statistically significant effect on the probability of expecting postgraduate enrolment after controlling for academic performance (grades), choice of field of study, or academic progression. Comparing with Tables 2 and 3, we see that grade at entry captures part of the effect of these factors on the probability of expecting postgraduate enrolment, but only to a very limited extent. For instance, the AME of having at least one parent with a university degree is 12.2% higher than the effect of having parents with primary studies (Table 2, Model 1), and such an effect is only reduced to 10.8% when grade at entry is considered (Table A8, Model 1). In sum, even including grade at entry into university (which entails the risk of artificially underestimating the effect of field of studies or grades as moderators of the effect of social origin), a net effect of either highest parental occupation or education is observed on the probability of expecting postgraduate enrolment instead of direct labour market entry (Tables A7 and A8).

The moderation effect of some degrees may be concealed within the broad categories of field of studies initially considered. The social sciences constitute 39.1% of the initial sample of analysis (Table A1), making these fields a far larger category than others, like the humanities. The social sciences may include degrees where the effect of social origin is more noticeable than in others, given that labour market entry is presumably quite heterogeneous across the different degrees within the category of 'Social Sciences', so broadly considered. We replicated the moderation analysis with a more nuanced classification of field of

[13] The steepest gradient of 'Engineering and Architecture' in Figs. 3 and 4 goes in line with the statistical significance of the corresponding coefficients of the interaction term, which is reflected in the difference between the predicted probability of expecting postgraduate enrolment instead of straightaway labour market entry between offspring or parents with the highest and lowest parental education and occupation among 'Engineering and Architecture' graduates (see Supplementary Online Material, Tables A4 and A5, last column).

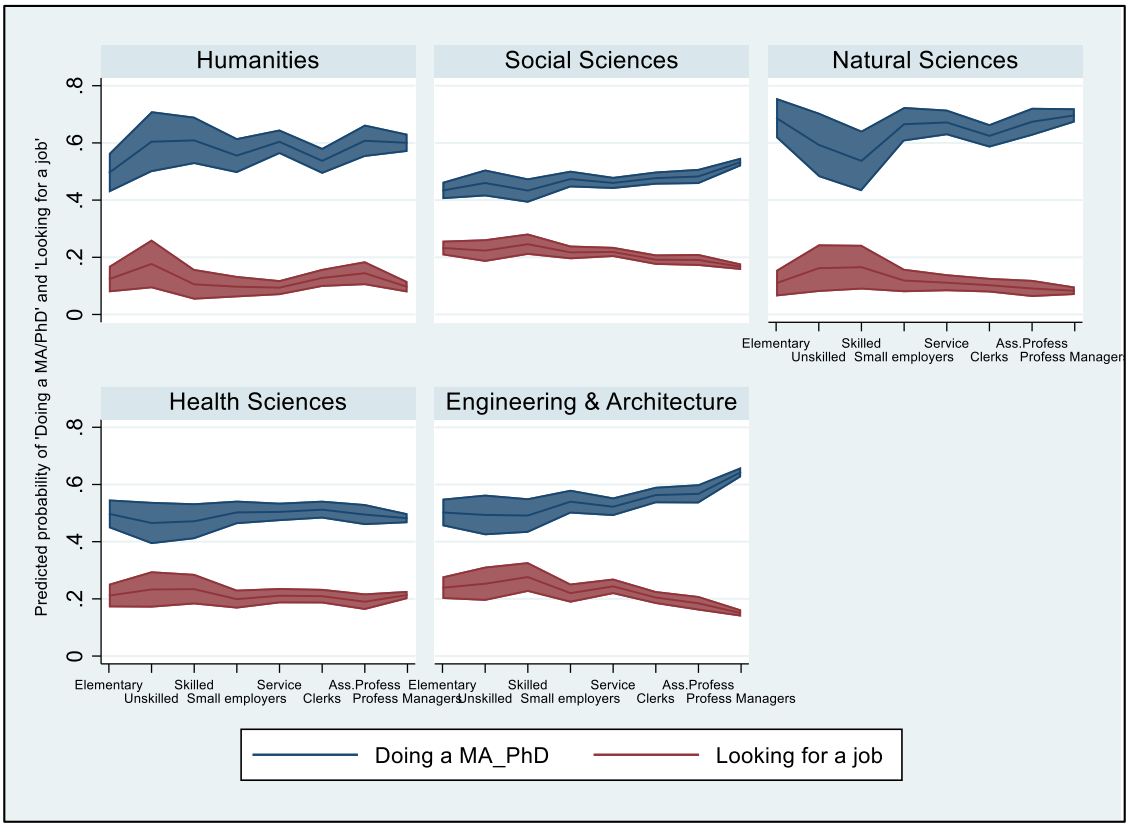

Fig. 4. Moderating effect of field of studies on master enrolment expectation and direct labour market entry (highest parental occupation).

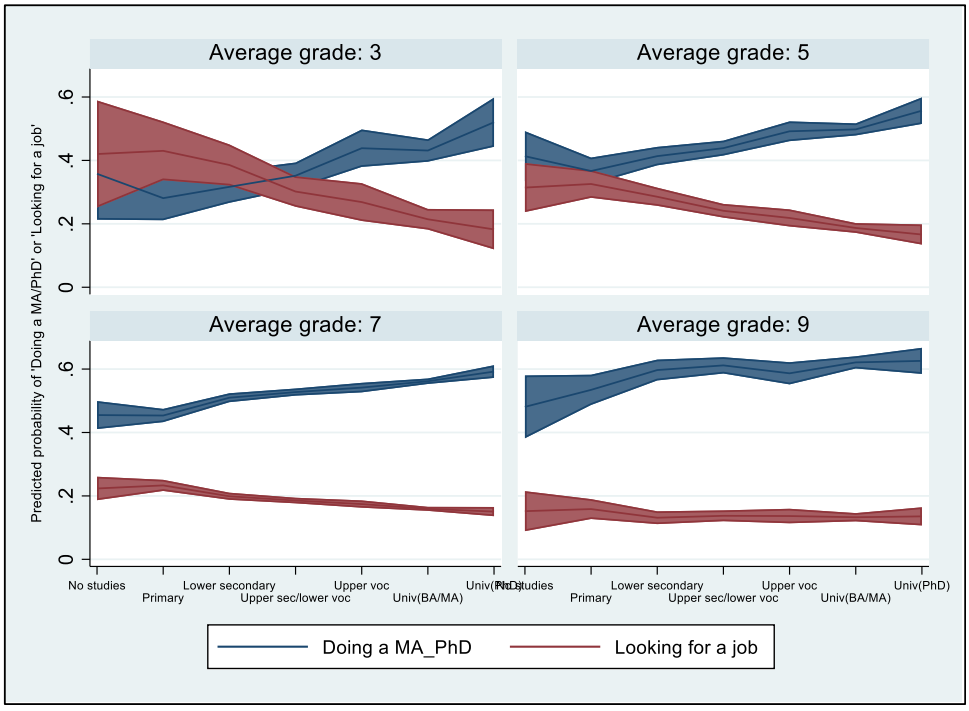

Fig. 5. Moderating effect of grades on master enrolment expectation and direct labour market (highest parental education).

studies. Given that the number of sub-graphs would be even higher than in Fig. 3, we refrained from offering a graphical representation of the results, presenting them as predicted probabilities in a table instead (Table 4). In the initial analysis, we saw that highest parental education has the strongest effect in 'Engineering and Architecture' (the contrast between the predicted probability of having at least one highly educated parent and having none [bottom row] in 'Engineering and Architecture' is 23.9% points, last column to the right); yet, there are two other sub-

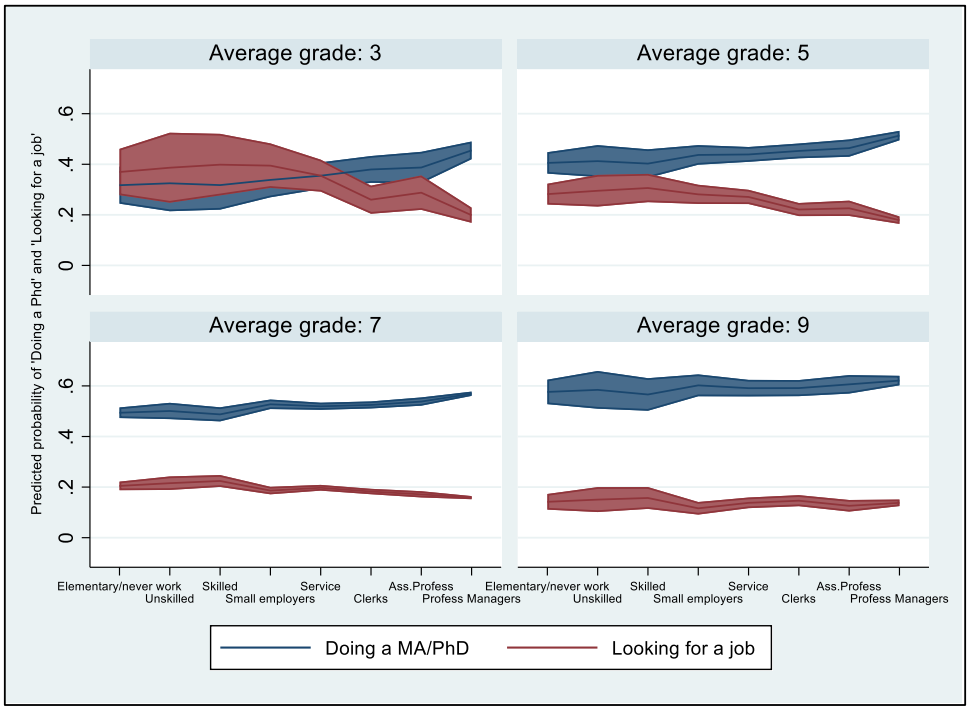

Fig. 6. Moderating effect of grades on master enrolment expectation and direct labour market (highest parental occupation).

fields within the initially broadly defined category of 'Social Sciences' where this contrast now appears quite noticeable: 'Economy, Business and Tourism' (19.8% points) and 'Law and Other Legal Studies' (22.9% points). What these sub-fields within 'Social Sciences' may have in common with 'Engineering and Architecture', relative to other fields, is the existence of specific occupational differences derived from holding a bachelor's or a master's degree.

Possibly not by chance, out of the 11 master's programmes listed by the Catalonian Agency of Higher Education in its 2020 Master Graduates Survey as 'credentialising master programmes' (that is, master's programmes that are 'required for getting access to a regulated profession') AQU (2020), p. 47), one of them is a Master in Law and seven of them belong to the field of Engineering and Architecture. Such a variation in occupational prestige derived from holding a bachelor's or master's degree, which may be related to the credentialising nature of some master's programmes and differ across fields of studies, deserves further exploration and is possibly behind a moderator role of field of studies in the association between socioeconomic origin and transition from bachelor's to master's degrees that has turned out to be unexpected. This unexpectedly stronger effect of social origin in fields of study where master's programmes are more likely to be of a credentialising nature (opening access to some occupations in exclusive terms) may in turn be related to micro-class immobility (Grusky & Weeden, 2001; Jonsson et al., 2009; Ruggera & Barone, 2017). We already have evidence that field of study choice is related to specific parental occupations (Van de Werfhorst and Luijkx (2010)). In licensed professions, where access is granted through credentialising master's programmes, the estimation of the risk associated with such a further educational investment may be lower (and the opportunities higher) among students with a parent who at least is already a member of one of these professions. These students may have access to occupational-specific skills, culture, or networks (or fixed resources — i.e., business) that make such a human capital investment particularly attractive, vis-à-vis other students of the same field who do not count on the same resources transmitted by their parents.

Finally, two robustness checks were carried out with different specifications of our dependent variable. In one case, all the categories capturing the student's intention to continue his/her studies ('Doing an MA', 'Doing another BA degree', or doing 'Other studies') were merged into one. In another case, 'Doing an MA' was merged with 'Other studies', on the assumption that the willingness to do 'Other studies' actually conceals a willingness to enrol in a master's programme that is not mature enough yet. Our initial results were robust to these different specifications of our dependent variable; that is, they are robust to the possibility that some who declares 'Other studies' finally enrols in a master's programme, and they are aligned with the idea (to be explored in further research) that any additional human capital investment is subject to the same social origin effect found for the transition from a bachelor's to a master's degree.[14]

5. Concluding remarks

Social differences in educational expectations have often been studied at 15 years of age, the age at which compulsory education often finishes and students have to decide between educational tracks that will determine their educational and occupational attainment. Expectations of postgraduate enrolment in higher education have received much less attention. No matter how late these transitions are, though, they may be decisive for occupational prestige and performance at entry into the labour market. Expansion of higher education has made the transition from bachelor's to master's degree programmes increasingly relevant for the study of educational inequalities and social mobility (Torche, 2011).

Applying multinomial logit modelling to information on expectations upon graduation provided by a sample of undergraduate students from three Spanish regions who were interviewed in 2018, the current research aimed, first, at exploring the effect of social origin on the undergraduate students' expectation of postgraduate enrolment. No matter what indicator of social origin is considered (highest parental occupation or education), there is clear evidence of such an effect, even after controlling for academic performance during the degree attainment and

[14] Results available upon request.

Table 4
Predicted probability of doing a 'MA/PhD' versus 'Work' (reference category in the dependent variable) corresponding to different categories of highest parental education in different fields of study (detailed classification). Standard error in brackets; control for gender, progression and academic performance (grades) included in the multinomial logit analysis.

	Humanities	Economy, Business & Tourism	Law & Other Legal Studies	Sociology & Political Science	Journalism & Communication	Education	Other Social Sciences	Natural Sciences	Medicine & Odontology	Health (others)	Engineering & Architecture
Primary / no studies	**0.457** ***	**0.410** ***	**0.467** ***	**0.451** ***	**0.455** ***	**0.303** ***	**0.547** ***	**0.654** ***	**0.334** ***	**0.485** ***	**0.448** ***
	(0.03)	(0.03)	(0.03)	(0.06)	(0.05)	(0.02)	(0.06)	(0.04)	(0.06)	(0.02)	(0.02)
Lower secondary	0.582 ***	0.476 ***	0.543 ***	0.448 ***	0.484 ***	0.370 ***	0.511 ***	0.632 ***	0.259 ***	0.555 ***	0.482 ***
	(0.02)	(0.02)	(0.02)	(0.05)	(0.03)	(0.02)	(0.04)	(0.02)	(0.04)	(0.02)	(0.02)
Upper sec. / lower vocational	0.591 ***	0.482 ***	0.558 ***	0.483 ***	0.455 ***	0.369 ***	0.522 ***	0.653 ***	0.316 ***	0.542 ***	0.560 ***
	(0.02)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.01)	(0.01)
Upper vocational	0.581 ***	0.577 ***	0.573 ***	0.482 ***	0.451 ***	0.378 ***	0.591 ***	0.641 ***	0.373 ***	0.537 ***	0.575 ***
	(0.03)	(0.02)	(0.03)	(0.05)	(0.03)	(0.02)	(0.04)	(0.02)	(0.04)	(0.02)	(0.02)
Univ (BA/MA)	0.597 ***	0.528 ***	0.633 ***	0.509 ***	0.496 ***	0.371 ***	0.601 ***	0.683 ***	0.343 ***	0.559 ***	0.635 ***
	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Univ (PhD)	**0.575** ***	**0.608** ***	**0.696** ***	**0.580** ***	**0.569** ***	**0.394** ***	**0.646** ***	**0.740** ***	**0.396** ***	**0.577** ***	**0.687** ***
	(0.04)	(0.03)	(0.04)	(0.07)	(0.05)	(0.04)	(0.05)	(0.03)	(0.03)	(0.03)	(0.02)
Diff Primary-Univ (PhD)	11,8	19,8	22,9	12,9	11,4	9,1	9,9	8,6	6,2	9,2	23,9

Statistical significance: * $p < 0.05$ * * $p < 0.01$ * ** $p < 0.001$

choice of field of study, which can be mechanisms by which social origin has an effect on further capital investment after bachelor's degree graduation.

On average, even after controlling by gender and the percentage of credits already attained (out of the total number of credits necessary for the bachelor degree in which the student is currently enrolled) the expectation of postgraduate enrolment is 15% points higher among offspring of at least one parent with postgraduate education himself/herself than among offspring of parents with primary education at most; in the same line, the expectation of postgraduate enrolment is on average 9% points higher among offspring of at least one managerial or professional parent than among offspring of parents in elementary occupations. Most of this social origin effect has not been found to be mediated by either field of studies or grades. In other words, most of the effect of social origin comes in the form of a secondary effect of social origin.

In line with our initial expectation, no evidence was found of a mediatory role of field of studies. The distribution of undergraduate students by field of studies does not contribute to explaining the influence of social origin on the expectation of postgraduate enrolment. Conflicting forces that may contribute to the distribution of students into fields of studies by social origin may explain the lack of such a mediation effect. Unlike our initial expectation, though, we found no mediation role of academic performance either. There is a clear secondary effect of social origin on expectation of master's enrolment, but no evidence of a primary effect was found. Grades are certainly associated with the expectation of postgraduate enrolment, but they do not capture much of the effect of social origin on such an expectation.

The lack of a mediation effect of field of studies or grades on the association between social origin and expectation of postgraduate enrolment contrasts with a clear moderation effect of both. Regarding fields of study, a stronger effect of social origin (in terms of either highest parental education or occupation) is not found in fields with relatively weaker labour market performance at entry, but in some fields with a relatively strong one, like 'Engineering and Architecture'. A robustness check with a more nuanced classification of field of studies revealed almost as strong an effect in some sub-fields within 'Social Sciences' ('Law and Legal Studies', 'Economics and Business'). What these sub-fields may have in common with 'Engineering and Architecture' is that the difference between bachelor's and master's degrees for students may have implications in terms of future occupational attainment and wages (e.g., through professional licensing) that are clearer than what happens in other fields of studies, no matter how weak or soft they are. This hypothesis, possibly linked to the Maximally Maintained Inequality thesis, is worth being considered for further research. Within some relatively large fields of studies or bachelor's degrees, master's programmes may offer improvement of occupational attainment that is particularly sought by bachelor's degree graduates from a more advantaged social origin.

Finally, we found a clear moderating effect of academic performance (grades) on the association between social origin and expectation of postgraduate enrolment. Grades are found to be far more consequential for expectations of postgraduate enrolment among undergraduate students from a low social background than among undergraduate students from a more advantaged one. These latter students are less sensitive to grades, thus confirming a compensatory advantage that still works at such a late stage in the educational trajectory.

A number of limitations of this study invite further research. Regarding the transition from bachelor's to master's degrees, longitudinal data should allow us to ascertain the extent to which the effect of social origin on expectations of postgraduate enrolment is translated into inequality of opportunities in actual enrolment and graduation. Certainly, there are reasons to think that educational expectations among mature students are better informed (and therefore more realistic) than among teenagers, but there may also be reasons why this inequality becomes stronger, due to uncertainties in family support that

are likelier to be stronger among parents with lower occupational attainment, with a more volatile income and employment situation between the moment their offspring formulate their expectation of postgraduate enrolment and the moment they can make it happen.

Tentative analysis with data drawn from the University Graduates Survey (*Encuesta de Inserción Laboral de Titulados Universitarios*, EILU) carried out in 2019 (one year after the survey we used for our analysis) by the Spanish Statistical Agency among master's and bachelor's graduates who had successfully completed their degree in the academic year 2013–2014 confirms the effect of parental education when the probability of master's graduation is evaluated. As a survey whose main goal was the assessment of the quality of bachelor's and master's graduates' transition to work, EILU did not include information on expectation of further education, but it allows to estimate the probability of master's graduation as a function of parental education. Figure A4 (Appendix) shows the predicted probability of master's degree attainment (instead of bachelor's attainment only) by highest level of parental education that results from applying logistic regression to complete EILU data and controlling by gender, age, and field of studies. The difference in the predicted probability of attaining a master's degree instead of just a bachelor's degree between university graduates with the highest and lowest levels of highest parental education interviewed for EILU is 13% points, a similar figure to the one that appears in Table 2, for the analysis of expectation of master's enrolment. It is important to note that this difference is concentrated among the offspring of university graduates, relative to offspring of parents with lower levels of highest parental education. In sum, there are signs, to be tested with further research with longitudinal data, first, that the effect of parental education persists when looking at graduation instead of *expectation* of enrolment in a master's programme, and second, that educational expectations among undergraduate students (and the inequalities they conceal) are quite realistic, possibly more than among students at previous stages of the educational trajectory. In particular, it would be interesting to check if the compensatory advantage of social origin expressed by the lower impact of grades on *expectations* of postgraduate enrolment among undergraduate students from advantaged social origin is effectively translated into a lower impact of grades on *actual enrolment* into postgraduate programs. Quite unfortunately, the EILU data mentioned above do not contain information on the average grade obtained at bachelor degree among interviewees who already held a master diploma at the time of the interview.

Another limitation of our study comes from the possibility that field of studies captures part of the effect of ability or grades, producing a downward estimation of the effect of grades on the probability of expecting postgraduate enrolment. The particular configuration of the system of higher education in Spain leads to a possible downward bias (underestimation) of the role of both field of studies and academic performance in the probability of postgraduate enrolment. In the case of field of studies, students from an upper social background with poor academic performance (low abilities) and thus with low grades at entry may be overrepresented in less demanding fields, vis-à-vis students from a lower social background with poor academic performance, who simply decide not to enter into university. This is equivalent to a selection bias that minimises the role of social origin in the probability of expecting postgraduate enrolment.

A third limitation comes from the fact that parental education was not recorded in enough detail to explore the possibility that the unexpectedly stronger association between social origin and expectation of master's enrolment in some fields of study with credentialising master's programmes associated with them actually hides the transmission of micro-occupational advantages from parents to offspring, so that the offspring are brought up in the values associated with the occupation (lawyer, medical doctor…) that the parents are actually holding, or that students have better information about how to select the adequate master's programme to get access to these professions. In sum, enrolling in a credentialising master's programme in case of undergraduate students from an advantaged social origin would allow socially advantaged students to repeat in their parents' profession with an estimated lower risk than in the case of other students with the same bachelor's degree but without parents who occupy positions in the professions these postgraduate programmes open access to.

Third, the information available in our data did not allow to distinguish the character or nature of the master's programme the interviewee is expected to enter upon bachelor's graduation. As we have argued in the paper, there are reasons to think that, beyond the general social gradient in the expectation of doing a master's instead of straightaway entering into the labour market, there are specific characteristics of some master's programmes (professional or credentialing master's, in the case of Law or Medicine, or research master's, mostly aimed at PhD enrolment) in which such a social selection may be even stronger.

Finally, although the response rate and margin error of Via Universitària II was deemed to be better than in other Eurostudent surveys, and the representativeness of the pool of respondents in terms of age, gender and field of study was confirmed by the technical staff responsible for the survey, non-response may have not been randomly distributed across categories of other variables relevant for the analysis. This calls for caution in the interpretation of results and invites to replicate our analyses with data drawn from other sources.

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Declaration of Competing Interest

The authors have no relevant financial or non-financial interests to disclose.

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Appendix A

Table A1
Descriptive Statistics (N = 32471).

	Mean (continuous variables, standard deviation in brackets) or percentage (binary or categorical variables)SD	Freq.
Expectations upon graduation		
Other BA	3.3%	1059
MA/PhD	53.6%	17415
Other studies	4.8%	1567
Work	18%	5859
Sabbatical	3.1%	993
Non-decision	17.2%	5578
Father's education		
No studies	3%	960
Primary	12.2%	3958
Lower secondary	21%	6832
Upper secondary or lower vocational	22%	7153
Upper vocational	11.1%	3597
University (BA/MA)	26%	8432
PhD	4.7%	1539
Mother's education		
No studies	2.4%	764
Primary	9.3%	3026
Lower secondary	19.2%	6235
Upper secondary or lower vocational	22.5%	7301
Upper vocational	11.7%	3792
University (BA/MA)	31.1%	10089
PhD	3.9%	1264
Father's occupation		
Managers professional	27.7%	8984
Associate professional	9.3%	3019
Clerks	9.9%	3217
Service	11.7%	3796
Small employers	15.9%	5163
Skilled	7.2%	2339
Unskilled	8.3%	2693
Elementary	8.8%	2859
Never work	0.1%	43
Mother's occupation		
Managers professionals	28.2%	9150
Associate professionals	7.2%	2338
Clerks	18.2%	5923
Service	16.2%	5258
Small employers	8%	2602
Skilled	2.7%	878
Unskilled	1%	310
Elementary	11.6%	3772
Never work	6.8%	2206
Gender (female)	61.8%	
Grade at entry (scale 5–14)	9,2(2148)	
Average grade (educational performance at university)	6,8(1006)	
Field of studies		
Humanities	8.8%	2821
Social Sciences	39.04%	12382
Natural Sciences	9.3%	3072
Health Sciences	20.5%	7051
Engineering & Architecture	22.2%	6930

Table A2
KHB decomposition method. Average partial effect of each category of highest parental education (relative to 'No studies') when each possible mediator (field of studies or grades) is introduced in the analysis.

		Field of studies	Grades
Primary (ref.cat: No studies)	Reduced model	0.001	0.001
	Full model	0.0001	-0.002
	Difference	0.001	0.004
Lower secondary	Reduced model	0.059 * *	0.059 * *
	Full model	0.053 *	0.057 *
	Difference	0.001	0.002
Upper secondary + lower vocational	Reduced model	0.081 * **	0.081 * **
	Full model	0.072 * *	0.079 * **
	Difference	0.009	0.002
Upper vocational	Reduced model	0.096 * **	0.096 * **
	Full model	0.089 * **	0.094 * **
	Difference	0.007	0.001
University (BA / MA)	Reduced model	0.124 * **	0.124 * **
	Full model	0.112 * **	0.119 * **

(*continued on next page*)

Table A2 (*continued*)

		Field of studies	Grades
	Difference	0.011	0.004
PhD	Reduced model	0.149 * **	0.149 * **
	Full model	0.143 * **	0.144 * **
	Difference	0.006	0.005
N		34454	34454

Statistical significance: * $p < 0.05$ * * $p < 0.01$ * ** $p < 0.001$

Table A3
KHB decomposition method. Average partial effect of each category of highest parental occupation (relative to 'Elementary occupation or no work') when each possible mediator (field of studies or grades) is introduced in the analysis.

		Field of studies	Grades
Managers & professionals (ref.cat: elementary)	Reduced model	0.087 * **	0.087 * **
	Full model	0.081 * **	0.084 * **
	Difference	0.006	0.002
Associate profess	Reduced model	0.055 * **	0.054 * **
	Full model	0.048 * **	0.053 * **
	Difference	0.007	0.000
Clerks	Reduced model	0.043 * **	0.042 * **
	Full model	0.034 * **	0.042 * **
	Difference	0.009	0.000
Service workers	Reduced model	0.030 *	0.030 *
	Full model	0.026 *	0.029 *
	Difference	0.003	0.000
Small employers	Reduced model	0.037 * *	0.036 * *
	Full model	0.033 *	0.036 * *
	Difference	0.004	0.000
Skilled workers	Reduced model	-0.002	-0.002
	Full model	-0.004	-0.003
	Difference	0.002	0.000
Unskilled workers	Reduced model	0.006	0.006
	Full model	0.006	0.007
	Difference	0.000	-0.001
N		33534	33534

Statistical significance: * $p < 0.05$ * * $p < 0.01$ * ** $p < 0.001$

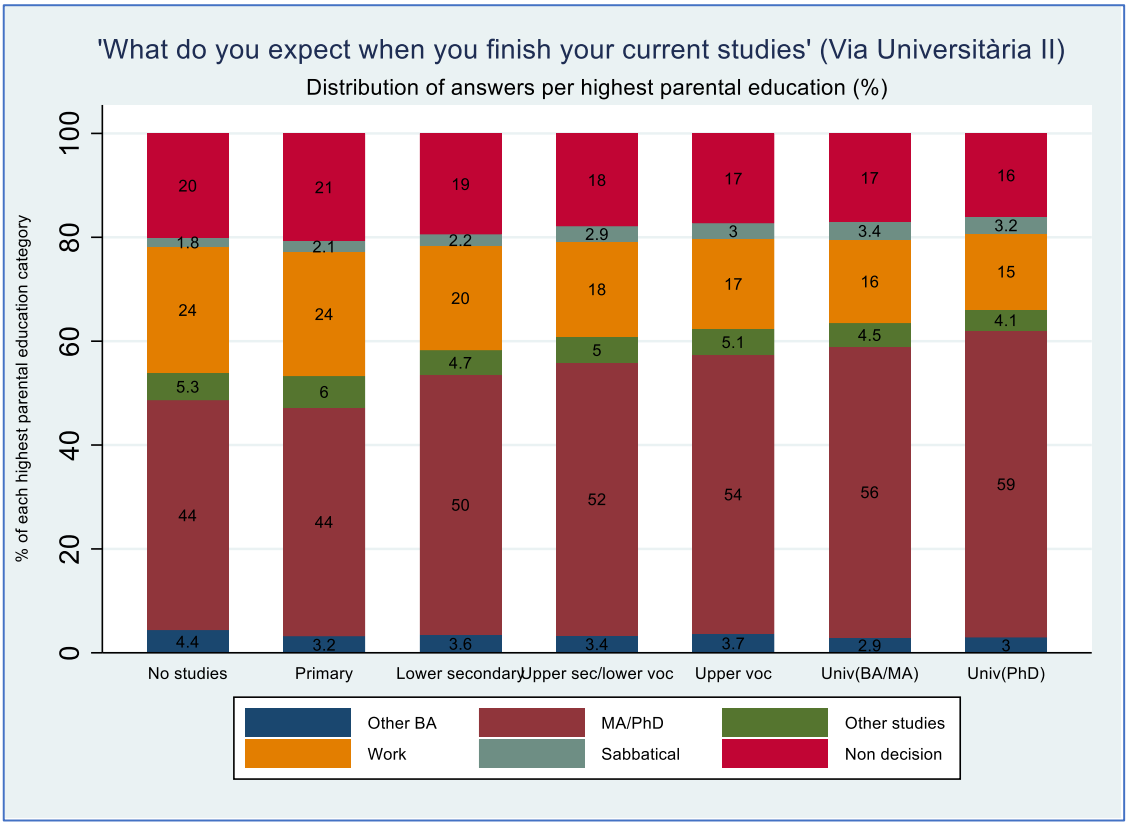

Fig. A1. Distribution of expectations by students' highest parental education.

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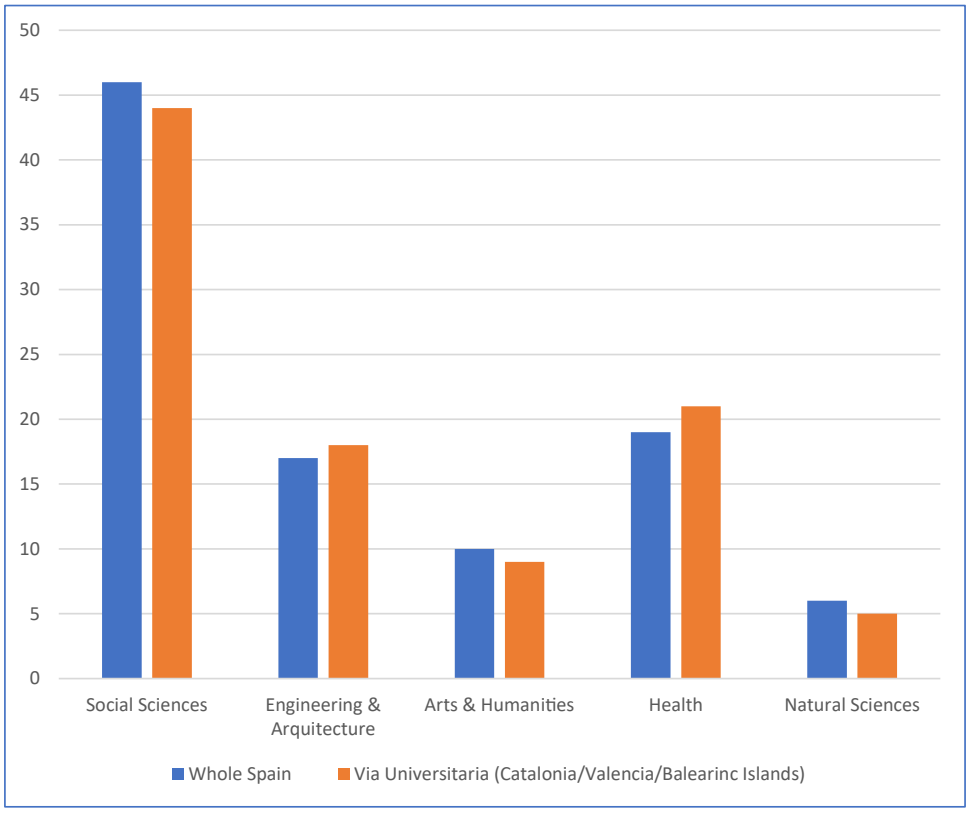

Fig. A2. Distribution of bachelor degree students by broad field of studies in the Via Universitària area and Spain as a whole in the academic year 2018–2019. Source: Spanish Ministry of Universities.

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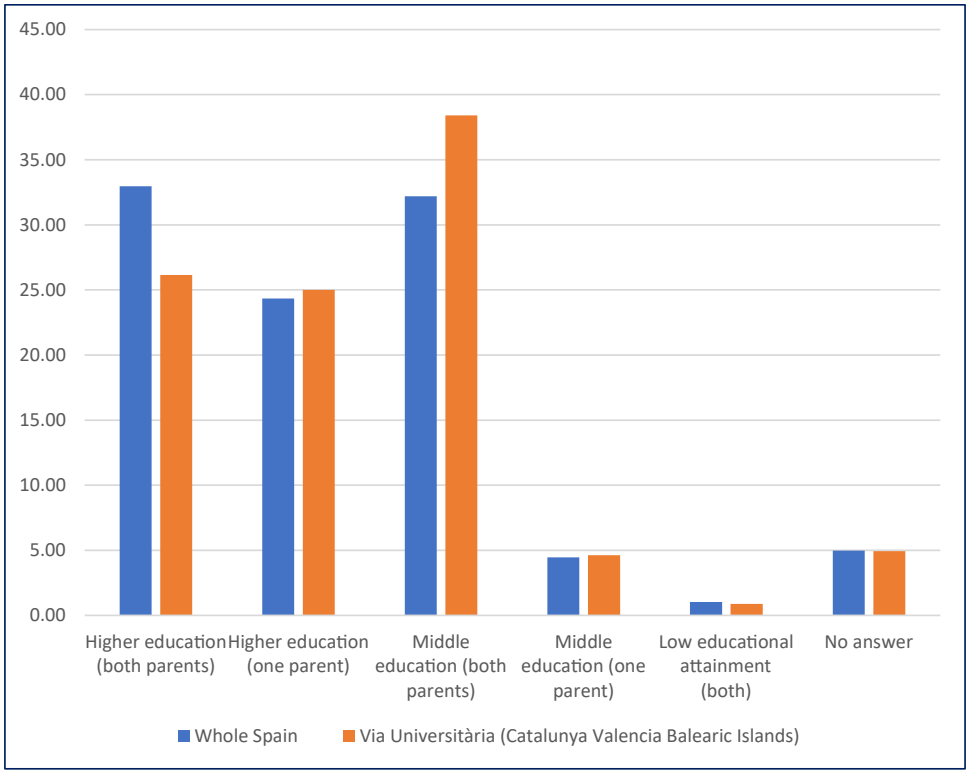

Fig. A3. Distribution of bachelor degree students by highest parental education in the Via Universitària area and Spain as a whole in the academic year 2018–2019. Source: Spanish Ministry of Universities (Sistema Integrado de Información Universitaria).

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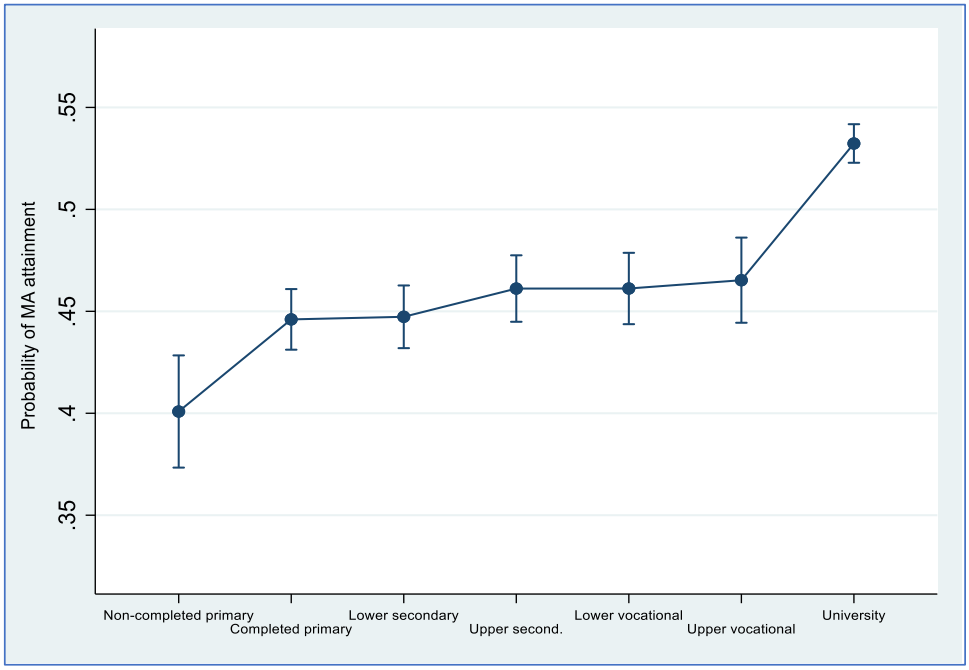

Fig. A4. Average marginal effect of parental education on postgraduate educational attainment (MA) (binomial logistic regression). Source: Spanish University Graduates' Transition to Labour Market Survey (EILU 2019).

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Appendix B. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.rssm.2023.100841.

References

AQU, Agència Catalana de Universitats (2020). *La inserció laboral dels titulats de màster de les universitats catalanes*. Barcelona: AQU.

Andrew, M., & Hauser, R. M. (2011). Adoption? Adaptation? Evaluating the formation of educational expectations. *Social Forces, 90*(2), 497–520.

Argentin, G., & Triventi, M. (2011). Social inequality in higher education and labour market in a period of institutional reforms: Italy, 1992–2007. *Higher Education, 61*(3), 309–323.

Ariño, A., Martínez, M., Llopis, R., Pons, E., & Prades, A. (2019). *Via Universitària: Accés, condicions d'aprenentatge, expectatives i retorns dels estudis universitaris (2017-2019)*. Valencia: Xarxa Vives,.

Ballarino, G., Meraviglia, C., & Panichella, N. (2021). Both parents matter. Family-based educational inequality in Italy over the second half of the 20th century. *Research in Social Stratification and Mobility, 73*, Article 100597.

Barone, C. (2019). Towards an education-based meritocracy. *ISA eSymposium for Sociology, 9*(1), 1–12.

Barone, C., & Ortiz, L. (2011). Overeducation among European university graduates: A comparative analysis of its incidence and the importance of higher education differentiation. *Higher Education, 61*(3), 325–337.

Bernardi, F. (2012). Unequal transitions: Selection bias and the compensatory effect of social background in educational careers. *Research in Social Stratification and Mobility, 30*(2), 159–174.

Bernardi, F. (2014). Compensatory advantage as a mechanism of educational inequality: A regression discontinuity based on month of birth. *Sociology of Education, 87*(2), 74–88.

Bernardi, F., & Triventi, M. (2020). Compensatory advantage in educational transitions: trivial or substantial? A simulated scenario analysis. *Acta Sociologica, 63*(1), 40–62.

Bernardi, F., & Valdés, M. T. (2021). Sticky educational expectations: A cross-country comparison. *Research in Social Stratification and Mobility, 75*, Article 100624.

Breen, R., Karlson, K. B., & Holm, A. (2018). Interpreting and understanding logits, probits, and other nonlinear probability models. *Annual Review of Sociology, 44*, 39–54.

Boudon, R. (1974). *Education, opportunity and social inequality*. John Wiley and Sons.

Buis, M. (2013). The composition of family background: The influence of the economic and cultural resources of both parents on the offspring's educational attainment in the Netherlands between 1939 and 1991. *European Sociological Review, 29*(3), 593–602.

Davia, M. A., McGuinness, S., & O'Connell, P. J. (2017). Determinants of regional differences in rates of overeducation in Europe. *Social Science Research, 63*, 67–80.

De Cuadra García, F. (2007). The impact of Bologna on engineering studies: Comments on the Spanish case'. *International Journal of Electrical Engineering Education, 44*(2), 139–145.

Di Paolo, A. (2012). Parental education and family characteristics: educational opportunities across cohorts in Italy and Spain. *Revista Dèlelőtt Economía Aplicada, 20*(58), 119–146.

Escardibul, J.-O., Perez-Esparrells, C., De la Torre, E., & Morales, S. (2017). Tuition fees in Spanish public universities: A regional convergence analysis. *Estudios sobre Educación, 32*, 197–221.

Fernández-Mellizo, M., & Martínez-García, J. S. (2017). Inequality of educational opportunities: School failure trends in Spain (1977–2012). *International Studies in Sociology of Education, 26*(3), 267–287.

Fernández Mellizo-Soto, M. (2022). ¿Cómo ha evolucionado la desigualdad de oportunidades educativas en España? Controlando el sesgo de selección de los modelos de transiciones educativas. *Revista Española Dèlelőtt Investigaciones Sociológicas, 117*, 21–42.

Garritzmann, J. L. (2016). *The political economy of higher education finance: The politics of tuition fees and subsidies in OECD countries, 1945–2015*. Palgrave Macmillan,.

Gines-Mora, J.-G., & García, A. (1999). Private costs of higher education in Spain. *European Journal of Education, 34*(1), 95–110.

Goldrick-Rab, S. (2006). Following their every move: An investigation of social-class differences in college pathways. *Sociology of Education, 79*(1), 67–79.

Goyette, K. A., & Mullen, A. L. (2006). Who studies the arts and sciences? Social background and the choice and consequences of undergraduate field of study. *The Journal of Higher Education, 77*(3), 497–538.

Grusky, D. B., & Weeden, K. A. (2001). Decomposition without death: A research agenda for a new class analysis. *Acta Sociologica, 44*(3), 203–218.

Hansen, M. N., & Mastekaasa, A. (2006). Social origins and academic performance at university. *European Sociological Review, 22*(3), 277–291.

Hartog, J., Ferrer-i-Carbonell, A., & Jonker, N. (2002). Linking measured risk aversion to individual characteristics. *Kyklos, 55*(1), 3–26.

Herbaut, E. (2021). Overcoming failure in higher education: Social inequalities and compensatory advantage in dropout patterns. *Acta Sociologica, 64*(4), 383–402.

Jonsson, J. O., Grusky, D. B., Di Carlo, M., Pollak, R., & Brinton, M. C. (2009). Microclass mobility: Social reproduction in four countries. *American Journal of Sociology, 114*(4), 977–1036.

Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *The Stata Journal, 11*(3), 420–438.

Korupp, S. E., Ganzeboom, H. B., & Van Der Lippe, T. (2002). Do mothers matter? A comparison of models of the influence of mothers' and fathers' educational and

occupational status on children's educational attainment. *Quality and Quantity, 36*(1), 17–42.
Lemieux, T. (2008). The changing nature of wage inequality. *Journal of Population Economics, 21*(1), 21–48.
Lucas, S. R. (2001). Effectively maintained inequality: Education transitions, track mobility, and social background effects. *American Journal of Sociology, 106*(6), 1642–1690.
Mare, R. D. (1981). Change and stability in educational stratification. *American Sociological Review, 46*(1), 72–87.
Marks, G. N. (2008). Are father's or mother's socioeconomic characteristics more important influences on student performance? Recent international evidence. *Social Indicators Research, 85*(2), 293–309.
Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review, 26*(1), 67–82.
Morgan, M. (2014). Patterns, drivers and challenges pertaining to postgraduate taught study: An international comparative analysis. *Higher Education Research & Development, 33*(6), 1150–1165.
Mullen, A. L., Goyette, K. A., & Soares, J. A. (2003). Who goes to graduate school? Social and academic correlates of educational continuation after college. *Sociology of Education, 76*(2), 143–169.
Neugebauer, M., Neumeyer, S., & Alesi, B. (2016). More diversion than inclusion? Social stratification in the Bologna system. *Research in Social Stratification and Mobility, 45*, 51–62.
Oh, B., & Kim, C. (2020). Broken promise of college? New educational sorting mechanisms for intergenerational association in the 21st century. *Social Science Research, 86*, Article 102375.
OECD, Organisation for Economic Co-operation and Development (2021). *Education at a glance 2021: OECD indicators*. OECD Publishing,. https://doi.org/10.1787/b35a14e5-en
Park, K. (2021). Adolescents' relative position in school and educational attainment: The mediating role of educational expectations. *Social Science Research, 94*, 1–15.
Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education, 75*(3), 249–284.
Posselt, J. R., & Grodsky, E. (2017). Graduate education and social stratification. *Annual Review of Sociology, 43*, 353.
Raftery, A. E., & Hout, M. (1993). Maximally maintained inequality: Expansion, reform, and opportunity in Irish education, 1921–75. *Sociology of Education, 66*, 41–62.
Ruggera, L., & Barone, C. (2017). Social closure, micro-class immobility and the intergenerational reproduction of the upper class: a comparative study. *The British Journal of Sociology, 68*(2), 194–214.
Sewell, W. H., Haller, A. O., & Portes, A. (1969). The educational and early occupational attainment process. *American Sociological Review, 34*, 82–92.
Sewell, W. H., Hauser, R. M., Springer, K. W., & Hauser, T. S. (2003). As we age: A review of the Wisconsin Longitudinal Study, 1957–2001. *Research in Social Stratification and Mobility, 20*, 3–111.
Spanish Ministry of Science, Innovation and Universities. (2019). *Datos y Cifras del Sistema Universitario Español. Publicación 2018-2019*. Ministerio de Ciencia, Innovación y Universidades.
Stolzenberg, R. M. (1994). Educational continuation by college graduates. *American Journal of Sociology, 99*(4), 1042–1077.
Teese, R., Aasen, P., Field, S., & Pont, B. (2006). *Equity in education thematic review: Spain country note*. Paris: Organization for Economic Co-operation and Development.
Torche, F. (2011). Is a college degree still the great equalizer? Intergenerational mobility across levels of schooling in the United States. *American Journal of Sociology, 117*(3), 763–807.
Triventi, M. (2013). Stratification in higher education and its relationship with social inequality: A comparative study of 11 European countries. *European Sociological Review, 29*(3), 489–502.
Triventi, M., Vergolini, L., & Zanini, N. (2017). Do individuals with high social background graduate from more rewarding fields of study? Changing patterns before and after the 'Bologna process'. *Research in Social Stratification and Mobility, 51*, 28–40.
Verhaest, D., & van der Velden, R. (2013). Cross-country differences in graduate overeducation. *European Sociological Review, 29*(3), 642–653.
Wakeling, P., & Laurison, D. (2017). Are postgraduate qualifications the 'new frontier of social mobility'? *The British Journal of Sociology, 68*(3), 533–555.
Van de Werfhorst, H. G., & Luijkx, R. (2010). Educational field of study and social mobility: Disaggregating social origin and education. *Sociology, 44*(4), 695–715.
Wu, C.-L., & Bai, H. (2015). From early aspirations to actual attainment: The effects of economic status and educational expectations on university pursuit. *Higher Education, 69*(3), 331–344.
Wulff, J. N. (2015). Interpreting results from the multinomial logit model: Demonstrated by foreign market entry. *Organizational Research Methods, 18*(2), 300–325.
Zarifa, D. (2012). Persistent inequality or liberation from social origins? Determining who attends graduate and professional schools in Canada's expanded postsecondary system. *Canadian Review of Sociology/Revue Canadienne Dèlelőtt Sociologie, 49*(2), 109–137.