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Qualitative social differentiation in tertiary education in Spain[1]

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Abstract

In this paper, we study whether the Effectively Maintained Inequality Hypothesis occurs in Spain. We hypothesize that at tertiary transitions in Spain, parental influences manifest not so much through the likelihood of making that transition, but rather through the qualitative differences associated to this transition in terms of educational program qualities. We analyze two qualitative characteristics of the university studies: the length of the program and its academic prestige. We identify for which individuals parental background matters the most in each case.

Keywords: Effectively maintained inequality, tertiary education, parental background

JEL codes: I24, I23.

Resum

En aquest treball, s'estudia si la hipòtesi de la desigualtat efectivament mantinguda ("effectively maintained inequality") es cumpleix a Espanya. Es postula que en les transicions terciàries a Espanya, les influències dels pares no es manifesten tant a través de la probabilitat de fer la transició, sinó més aviat a través de les diferències qualitatives associades a aquesta transició en termes de les qualitats dels programes educatius. Analitzem dues característiques qualitatives dels estudis universitaris: la durada del programa i el seu prestigi acadèmic. Identifiquem per a quins individus la influència parental és més important en cada cas.

Paraules clau: desigualtat efectivament mantinguda, educació terciària, influència parental.

Codis JEL: I24, I23.

Introduction

The literature on intergenerational mobility has for long recognized the importance of education as the key intermediate factor (Richard Breen and Jan O. Jonsson, 2005, Robert Erikson and John H. Goldthorpe, 2002, Alan C. Kerckhoff, 2001, 1995). This research has documented a large increase in educational mobility, which, in time, facilitates also the class mobility across generations. Results, however, are not uniform across countries and have been demonstrated to depend on the country's structure of schooling and its influence on transitions between levels of education for different social origins (Walter Muller and Wolfgang Karle, 1993). In light of this evidence, special attention has to be paid not only to the probabilities of attaining certain levels of education conditioned on the social origin (as advanced by the Mare model (Robert D. Mare, 1981)), but also to the probabilities of attaining a certain type of education within a given level. This latter approach has arisen from an observation that parental background influences tend to fade as transitions to higher levels of education are concerned (Adrian E. Raftery and Michael Hout, 1993, Yossi Shavit and Hans Peter Blossfeld, 1993). Several alternative hypotheses have been advanced in order to explain the waning family background phenomenon. In the Life Course Perspective (LCP), Muller and Karle (1993) claimed that students at later transitions are less dependent on their parents in financial and cultural terms. This perspective cannot be really embraced in Spain. Especially strong family ties characterize the Spanish society and individuals become emancipated at a later age than in other European countries. So the life course perspective would not hold in Spain for cultural reasons. The alternative hypothesis named Maximally Maintained Inequality (MMI) claims that parental effects lose strength in educational mobility equations because education is highly subsidized by governments and enrollment rises so fast that lower social classes are progressively included into levels of education previously closed for them (Adrian E. Raftery and Michael Hout, 1993). This situation is much more plausible in Spain given its spectacular democratization of education (especially tertiary education in recent decades). There is, however, empirical evidence that Spanish social mobility is still limited. In this paper, we study whether the effectively maintained inequality theory proposed by Lucas can explain this fact.

Effectively Maintained Inequality (EMI) advanced by Lucas (Samuel Lucas, 2009, Samuel R. Lucas, 2001) speculates that family of origin effects are manifested across successive transitions not only through odds of making a particular transition, but also (and here is the novelty) through qualitative differences within each transition. These qualitative differences can take form of choosing one particular track over another or one type of school over the other. The hypothesis that we pursue here derives directly from EMI. We hypothesize that at tertiary transitions in Spain, parental influences manifest not so much through the likelihood of making that transition, but rather through the qualitative differences associated to this transition in terms of educational program qualities. We analyze two qualitative characteristics of the university studies: the length of the program and its academic prestige.[2]

[2] Triventi (2011) uses the same survey to analyze similar variables in a comparative study of 11 European countries. Our paper focuses exclusively in Spain and its education system. This allows us to obtain a detailed analysis of the EMI hypothesis in this country.

We can distinguish between long and short programs in the Spanish universities during the 2000s. They differ in several qualitative aspects apart from the years of study they require. The long program, which is called *Licenciatura*, lasts 4 years and gives access to doctoral studies. Moreover, it is generally regarded as more prestigious by the labor market, which translates into on average offers more and better job opportunities than the short program (*Diplomatura*, 3-year studies). In some occupations, it is actually required by law to have a degree from a long program (Engineering, Law, Medicine…) to be employed.

We look also at the academic prestige of the study program reported by individuals five years after graduation. This variable measures to what extent the program attended by graduates was regarded as academically prestigious and thus, would give them better chances for a good employment.

The rest of the paper is organized as follows. The next section sketches the historical context in the Spanish educational expansion and provides motivation why one would like to concentrate on the tertiary rather than secondary transition in order to test EMI. Section 3 presents the data and analytical methods used for each of the two analyses: program length and academic prestige. Finally, the last two sections present and discuss results respectively.

2. Historical context in the organization of the modern Spanish education system

Modern Spanish education system known today is a product of years of evolution rather than a product of revolution. Changes applied to the education system came through a series of reforms, which could be traced back as much as to the middle ninetieth century and the Public Instruction Act (*Ley de Instrucción Pública*). It was the first comprehensive education law in Spain. In fact, this law laid the basis for all the subsequent laws in Spain. It promoted and reinforced the creation of private, most often Catholic, primary and secondary schools, which exist until today and are regarded as offering high quality, prestigious education. The Public Instruction Act made for the first time a strong point on the introduction of sciences into secondary education, which fostered the acquisition of technical skills by Spanish elites. It has to be recognized that until roughly the death of General Franco, Spanish education system above the primary level was largely an elite system. During the major part of the twentieth century (until late sixties) university education was largely a question of a much selected elite than the massive phenomenon known today. Selectivity measured by the proportion of candidates who passed the examination allowing them to apply to universities was at the level 33-40% until fifties and kept well below 50% until seventies[3] when a specific and short-lasting reform[4] allowed a massive entry into the university for the first time (EURYDICE, 2009b, Loris Perotti, 2007).

[3] Exception here is the period 1957/1958 when the respective proportion of candidates who passed the examination was 52%.

[4] General Act on Education and Financing of Educational Reform (*Ley General de Educación y Financiamiento de la Reforma Educativa, LGE*).

Secondary level expansion

The secondary education in Spain ceased to be elitist much earlier than the tertiary. Already the Constitution of the Second Republic proclaimed in 1931 provided a basis for free and compulsory primary education. Later, in 1953, the dictatorial regime reformed the secondary education finishing its elitist position and introduced the possibility for studying it at two levels: elementary (up to 14 years of age) and higher (up to 16 years). At that time, the pre-university course was also introduced (later changed into university orientation course (*COU – Curso de Orientación Universitaria*)). It is then when we can already talk about the expansion of the secondary education. However, the real expansion occurred with the introduction of the General Act on Education and Financing of Educational Reform in 1970 (*Ley General de Educación y Financiamiento de la Reforma Educativa*) which established free and compulsory education for everyone aged 6 to 14 and laid several legislative provisions for an improvement of the quality of education for all pupils. The following reforms that occurred in the decade of eighties were characterized by the same aim – expansion of the secondary education, and constant improvement in its quality. The Act on the Right to Education approved in 1985 provided a basis for publicly funded private schools which were supposed to increase the access to quality secondary education yet more (EURYDICE, 2009b). All these legislative efforts found their culmination in the Act on the General Organization of the Education System (*Ley Orgánica de Ordenación General del Sistema Educativo, LOGSE*) issued in 1990. LOGSE extended free and compulsory education until age 16, entailing primary (*Educación Primaria*) and lower secondary (*Educación Secundaria Obligatoria, ESO*) education. At present the secondary education in Spain can safely be called universal (EURYDICE, 2009a)[5]. Participation rate in the secondary education (jointly ISCED 2 and ISCED 3) reached almost 100% (97%) for the population of 15-year-olds in 2006 in Spain. For the 16-year-olds, the participation rate falls to some 93%. Majority of secondary level students are enrolled in academic programs. The ratio for the total population is 57.5% in favor of academic schooling vs. vocational education. For male population the ratio falls to 54% in academic tracks while for females it grows to almost 60%. Participation rate in secondary education falls to 70% after the age of 16 (end of compulsory education), which is similar to the average for the whole European Union (EU-27).

Massive tertiary level

Given the universality of the secondary education one gets to ask what is the participation rate in tertiary education in today's Spain. In tertiary levels, there has occurred a very similar, though much delayed, trend as in secondary education. Participation rate in tertiary education in Spain grew seven times the size of that in the early sixties. In 2008 over 45% of women and 30% of men aged 20 were enrolled in tertiary education. Even more striking are the figures of new enrollments compared to the 18-year-old population in Spain. The participation at this age group grew from 21% in early eighties to over 55% in the end of nineties (Jose-Gines Mora et al., 2000). In the age

[5] It must be noted here that despite the universality of the secondary education in Spain today, the dropout rate from the compulsory secondary education is extremely high, reaching over 30% of all pupils at that level. Furthermore, there are different types of schools (private/public) and various track types, which constitute a very important research topic.

group 25-34, the population ratio holding tertiary degree to the whole population in Spain is 39%. Slightly lower ratio can be found for the whole active population which is 29% for the year 2007.

To arrive at this participation levels the Spanish tertiary education has undergone several groundbreaking changes over the last decades. The process of reforming tertiary education can be traced back to early seventies when the General Act on Education and Financing of Educational Reform (*Ley General de Educación y Financiamiento de la Reforma Educativa*) introduced new rules of access to university. All pupils willing to enroll in the university had to pass from then on an entry exam after accomplishing three years of higher secondary education (*Bachillerato Universal y Polivalente, BUP*) and a one-year university orientation course (*Curso de Orientación Universitaria, COU*).[6] Meanwhile the upper secondary education was controlled by the secondary school; the university preparatory course's curriculum was set by universities but still taught by the institutes of secondary education. The 1970 law organized the university system as well. It introduced formally the three cycle system which existed until very recently, with first cycle studies being 3-years long and leading to a title of *Diplomatura*, or longer 4-year title *Licenciatura*, second cycle studies usually lasting 1-2 years and awarding titles of *Licenciatura*, and finally graduate third cycle programs awarding advanced degrees (doctorate).

The key change for the organization of tertiary education in Spain was the introduction of the Act on University Reform (*Ley de Reforma Universitaria, LRU*) in 1983. It changed several things about university organization giving it, above of all, the long-demanded autonomy in establishing new curricula. This was also the first law to abandon the old financing system assigned to full professor positions and shifted it towards the students enrollment numbers (EURYDICE, 2009b, Jose-Gines Mora and Javier Vidal, 2000, Loris Perotti, 2007). Under the new system, universities could enroll much more students, create new curricula and introduce certain flexibility in the assessment rules. This opened a wide avenue for mass tertiary education for the first time in the history of Spain. This law was reinforced with the provisions of the Act on the General Organization of the Education System (*Ley Orgánica de Ordenación General del Sistema Educativo, LOGSE*) in 1990. The main contribution of this law to mass tertiary education was establishing that higher vocational education became higher non-university education thereafter. The massive inflow of students into the tertiary system called for the need of establishing some quality rules in the tertiary sector. This was brought by the Act on Universities (*Ley Orgánica de Universidades, LOU*) in December 2001. Apart from a further strengthening of the university autonomy and the introduction of the National Agency for Quality Assessment and Accreditation (*ANECA*), LOU expanded also the influence of local autonomous governments on university financing. All these changes led to a rapid and massive expansion of the tertiary education in Spain (Javier Vidal, 2003). While in 1982 there were 31 universities in Spain (5 private and 26 public), in 2005 there were already 71 universities (from which 23 were private). Such increase shows best the magnitude of the tertiary level expansion in Spain during the last two decades.

Given the massive participation in the secondary education and extremely high levels of enrollment in tertiary levels (short and long programs) we believe it is most interesting to test the

[6] In the 1970 (the year of introduction of the law), students had only to accomplish the university orientation course without the need of taking the entry exam.

Effectively Maintained Inequality hypothesis with respect to the tertiary level of education. It could also be tested, though, at the secondary level taking into account types of tracks and private/public school distinctions. We decide to concentrate on tertiary level education transitions and their qualitative dimension. The REFLEX data offers us unprecedented quality of information on qualitative aspects of educational program, which allow testing EMI hypothesis in much greater depth than other data sets currently available for Spain.

3. Data and Methods

To analyze whether the effectively maintained inequality theory applies to the choice of tertiary level studies in Spain, we use REFLEX data. This survey consists of information on individuals who graduated in 1999/2000 and were interviewed five years later in 2005. We have detailed information on their graduate studies, their parental level of education and their personal background. All this information is available for 3,522 individuals in Spain. The survey used stratified sampling and had a response rate of 22% in Spain.

Parental background is described by the level of education of the father and the mother of the respondent. Each of these variables has four levels: 1- without studies, 2- primary education, 3- secondary education and 4- tertiary education. We also created a variable that collects the highest level of education attained by parents.

We perform two types of analysis. First, we estimate the effect of parental background on the probability to study a short vs. long program. As mentioned above, this distinction does not only refer to number of years of study, but it has a qualitative aspect as well. Graduates from short programs have no access to doctoral studies and generally have more limited job opportunities than graduates from long programs, especially in Spain (Jose-Gines Mora, Jose Garcia-Montalvo and Adela Garcia-Aracil, 2000). We perform a logistic estimation and using predicted probabilities check whether the most likely outcome changes due to parental background. If this is the case, we argue that it represents empirical support for the efficiently maintained inequality thesis.

Second, we analyze a qualitative dimension within each type of program. We have information on six qualitative characteristics of the study program at the tertiary level. The respondent was asked to what extent the program was generally regarded as demanding, was academically prestigious, was vocationally oriented, had a broad focus, employers were familiar with the content and there was freedom in composing own program. Estimation analyses reveal that only Prestige depends on the parental education level. Therefore, our further analysis concentrates exclusively on this characteristic. We define Prestige as a three-category variable (converted from a five-category scale). We perform ordered logistic estimations to learn whether parental background changes the choice of studies of their offspring in terms of this qualitative variable. We run the analysis by level of education: *diplomatura* (lower tertiary, 3-year studies) and *licenciatura* (higher tertiary level, 4-year studies).

Table 1 reports the descriptive statistics of the variables per sample. Above 60% of graduates studied a long program. Moreover, the average prestige of long programs ('Licenciatura') is slightly higher than that of short programs ('Diplomatura'). We observe a better parental background for

the 'Licenciatura' sample, suggesting that parental education will influence the choice between long and short program. Similarly, those who chose long program have on average higher grade in secondary education than those who studied a short program. As for gender, there are no significant differences across samples. Around 64% of the graduates are female. The highest difference is in the track of secondary education. Those who followed a vocational track are more likely to study a short program. This is due to the tracking system itself that restricts the access of these students to some long programs.

Table 1. Descriptive statistics.

	Whole sample		'Diplomatura' sample		'Licenciatura' sample	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Long program	0.601	0.490	0	0.000	1	0.000
Prestigious program	2.014	0.828	1.847	0.803	2.124	0.825
Father's education level	2.646	0.966	2.453	0.905	2.775	0.984
Mother's education level	2.444	0.885	2.268	0.824	2.560	0.905
Highest parental education level	2.792	0.945	2.590	0.912	2.926	0.944
Female	0.645	0.479	0.653	0.476	0.639	0.480
Vocational track	0.086	0.280	0.169	0.374	0.031	0.174
Grade in secondary education	2.861	0.926	2.646	0.822	3.005	0.963
Number of observations	3522		1406		2116	

4. Results

4.1 Long vs. short program

We first study whether parental background influences the choice between long and short university program. Table 2 reports the logistic estimation coefficients of the probability of studying a long program. In model 1, we include father's education level. Model 2 includes instead the highest level of education of the parents, while model 3 includes both the education level of father and mother.[7] Apart from parental education, we control for gender, track of secondary education (vocational vs. academic) and ability (average grade in secondary education[8]). All these variables have a significant effect on the choice of study program. Results are as expected. Females and students that followed the vocational track in secondary education are less likely to graduate from a long program, while higher ability and parental education increase chances of studying a long program.

[7] We have experimented also with model which included solely mother's education and not the father's but it always proved insignificant making us convinced that the above configuration of parental education used in models 1-3 should be employed instead.

[8] Average grade in secondary education takes the following values: 1-pass ('suficiente'), 2- good ('bien'), 3- very good ('notable'), 4- excellent ('excelente') and 5- excellent with honors ('matrícula de honor').

Table 2. Table of coefficients for a logistic estimation. Dependent variable: Long program (1=long, 0=short).

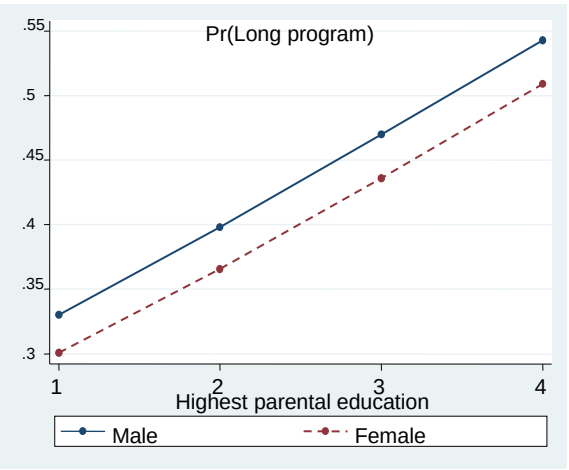
	(1) Long program	(2) Long program	(3) Long program
Female	-0.118	-0.128*	-0.128*
	(-1.54)	(-1.67)	(-1.66)
Vocational track	-1.870***	-1.858***	-1.850***
	(-12.64)	(-12.54)	(-12.49)
Grade in secondary educ.	0.483***	0.476***	0.473***
	(11.30)	(11.14)	(11.03)
Father's education	0.276***		0.184***
	(7.14)		(3.79)
Highest parental education		0.296***	
		(7.51)	
Mother's education			0.165***
			(3.07)
Constant	-1.437***	-1.508***	-1.563***
	(-8.77)	(-9.05)	(-9.23)
N	3522	3522	3522
AIC	4339.3	4333.8	4331.8
BIC	4370.1	4364.6	4368.8
McKelvey & Zavoina's R^2	0.151	0.153	0.155

t statistics in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

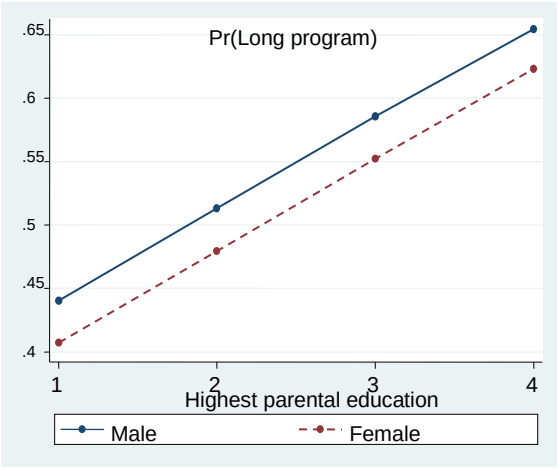
Results in Table 2 reveal that parental background influences the probability of studying a long program. However, we need to resort to predicted probabilities to confirm that this effect is strong enough to change the most likely outcome for particular individuals.

Figure 1 shows the three cases that were found to confirm the effectively maintained inequality thesis (Samuel R. Lucas, 2001). In the rest of the cases, parental background did not change the most likely outcome of individuals, hence did not prove the existence EMI. To compute predicted probabilities we used the estimation that includes the highest level of education of parents (Model 2).

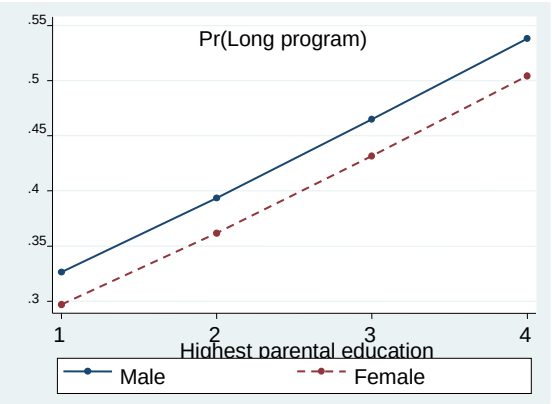
Figure 1. Plot of predicted probabilities of studying a long program by parental background. Cases where EMI is satisfied.



a. Academic track in secondary education and average grade *'pass'*.



b. Academic track in secondary education and average grade '*good*'.



c. Vocational track in secondary education and average grade '*excellent with honors*'.

Parental education: 1-without studies, 2-primary education, 3-secondary education and 4-tertiary education.

As it becomes clear from the predicted probabilities, parental education helps those individuals with low grades in secondary education that studied an academic track and those individuals with best grades in secondary education that followed a vocational track. Consider, for instance, a male who followed an academic track in secondary education and has an average grade of '*good*' (Figure 1b). If none of his parents has any studies, he is more likely to study a short program (probability of studying a long program 0.44, vs. probability of studying a short program 0.56). In contrast, had one of his parents secondary or tertiary education, then he would most likely study a long program (probability of studying a long program 0.59 and 0.65 respectively).

4.2 Prestige of the program

To investigate further whether the effectively maintained inequality thesis is satisfied in Spain, we test whether parental education level influences the choice of an academically prestigious program within short and long university programs respectively. We estimate ordered logistic equations separately by each type of program. Table 2 reports the coefficient estimates for three different specifications. In model 1, we include father's education level. Model 2 includes instead the highest level of education of the parents, while model 3 includes both the education level of father and mother. As before, we control for gender, track in the secondary education and ability.

Results reveal that parental educational background is important only for the '*licenciados'* group. Moreover, model 1 is preferred as indicated by the Akaike's and Bayesian information criteria. Therefore, if parental background matters in choosing an academically prestigious program, it occurs in higher tertiary education (long program). Moreover, father's education level (model 1) is the main determinant of this effect.

Table 2. Table of coefficients for an ordered logistic estimation. Dependent variable: Academically prestigious program (3 levels: low, medium, high prestige).

	Short-program (diplomatura)			Long-program (licenciatura)		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	-0.891***	-0.893***	-0.897***	-0.472***	-0.476***	-0.472***
	(-8.36)	(-8.37)	(-8.40)	(-5.52)	(-5.57)	(-5.52)
Vocational track	-0.200	-0.182	-0.183	-0.436*	-0.456**	-0.436*
	(-1.45)	(-1.32)	(-1.32)	(-1.89)	(-1.98)	(-1.89)
Grade in secondary educ.	0.374***	0.372***	0.368***	0.340***	0.341***	0.340***
	(5.94)	(5.90)	(5.83)	(7.69)	(7.70)	(7.67)
Father's education	0.0434		-0.0150	0.142***		0.148***
	(0.77)		(-0.21)	(3.41)		(2.79)
Highest parental education		0.0863			0.103**	
		(1.55)			(2.39)	
Mother's education			0.107			-0.0111
			(1.39)			(-0.19)
cut1						
Constant	0.0905	0.204	0.172	0.136	0.0480	0.128
	(0.39)	(0.88)	(0.72)	(0.76)	(0.26)	(0.69)
cut2						
Constant	1.601***	1.716***	1.684***	1.468***	1.377***	1.460***
	(6.84)	(7.24)	(6.96)	(8.01)	(7.34)	(7.75)
N	1406	1406	1406	2116	2116	2116
AIC	2947.2	2945.4	2947.3	4496.6	4502.5	4498.5
BIC	2978.7	2976.9	2984.0	4530.5	4536.4	4538.1
MZ R^2	0.0758	0.0772	0.0773	0.0541	0.0513	0.0541
Brant χ^2	1.812	1.613	2.110	5.840	6.427	6.593
Brant p-val.	0.770	0.806	0.834	0.211	0.169	0.253

t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, McKelvey & Zavoina's R^2 reported, cutoff points tested for not overlapping.

Next, we compute the predicted probabilities for different individuals to find out those cases where parental background is strong enough to change their most likely outcome. We do so for the '*Licenciatura*' sample only, since estimation results show that parental background does not explain prestige of the program in the 'Diplomatura' sample. We compute predicted probabilities using model 1, which is the best one according to Akaike's and Bayesian information criteria.

Tables 3 and 4 report predicted probabilities of attending an academically prestigious program as a function of father's education and for all combinations of gender and average grade from secondary education. Table 3 considers the probabilities for an individual who followed an academic track in secondary education, while Table 4 reports the probabilities for an individual from a vocational secondary track. Recall that these probabilities are all referring to the sample of '*Licenciados*' (the long program graduates).

Table 3. Predicted probabilities of attending an academically prestigious program (Academic track, 'Licenciados' sample).

		Male in Academic track			Female in Academic track		
		Prestige levels of study program					
Grade in secondary educ.	Father's education	high	medium	low	high	medium	low
1 'Pass'	No studies	**0.27**	**0.31**	**0.41**	0.19	0.28	0.53
	Primary	**0.30**	**0.32**	**0.38**	0.21	0.29	0.50
	Secondary	**0.33**	**0.32**	**0.35**	0.24	0.30	0.46
	Tertiary	**0.36**	**0.32**	**0.32**	0.26	0.31	0.43
2 'Good'	No studies	0.34	0.32	0.34	0.25	0.31	0.45
	Primary	0.38	0.32	0.30	0.27	0.31	0.41
	Secondary	0.41	0.31	0.28	0.30	0.32	0.38
	Tertiary	0.44	0.31	0.25	0.33	0.32	0.35
3 'Very good'	No studies	0.42	0.31	0.26	**0.31**	**0.32**	**0.37**
	Primary	0.46	0.30	0.24	**0.35**	**0.32**	**0.33**
	Secondary	0.49	0.29	0.21	**0.38**	**0.32**	**0.30**
	Tertiary	0.53	0.28	0.19	**0.41**	**0.31**	**0.27**
4 'Excellent'	No studies	0.51	0.29	0.20	0.39	0.32	0.29
	Primary	0.54	0.28	0.18	0.43	0.31	0.26
	Secondary	0.58	0.26	0.16	0.46	0.30	0.24
	Tertiary	0.61	0.24	0.14	0.50	0.29	0.21
5 'Excellent with honors'	No studies	0.59	0.25	0.15	0.47	0.30	0.23
	Primary	0.63	0.24	0.14	0.51	0.29	0.20
	Secondary	0.66	0.22	0.12	0.55	0.27	0.18
	Tertiary	0.69	0.20	0.11	0.58	0.26	0.16

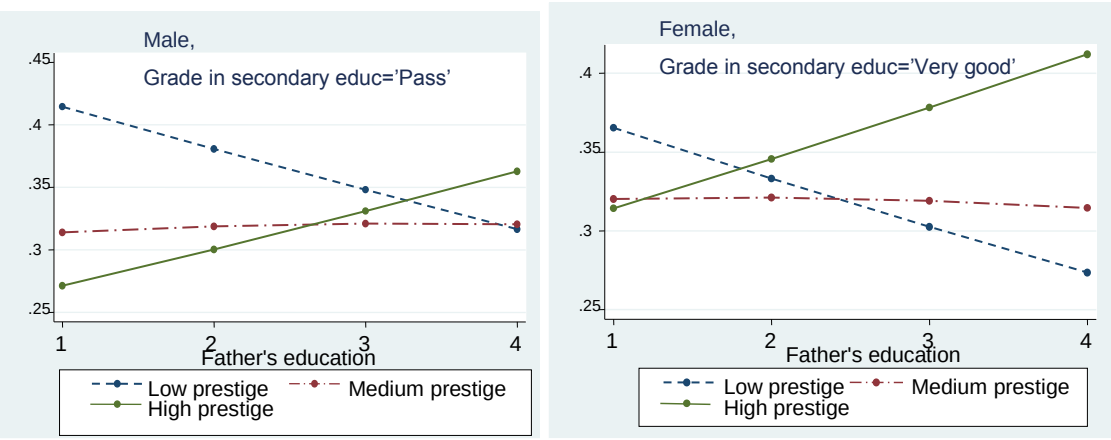
Bolded were EMI is satisfied.

Bolded in Table 3 are all those combinations of gender and secondary average grade from an academic secondary track that give support to the EMI hypothesis. Parental background changes the most likely outcome for males with lowest grade in secondary education. Notice for instance that the most likely outcome for this individual when his father has no studies is to attain a low prestige program (probability 0.41). Had his father had tertiary education, his most likely outcome in terms of program prestige would be a highly prestigious program (with probability 0.36). In the case of females, parental background changes the most likely outcome when they have 'very good' grade from their secondary education.

Figure 2 plots the predicted probabilities for these two types of individuals. Results show that male who followed an academic track in their secondary education and have an average grade 'Pass' from those studies benefit from having a father with tertiary education. While the most likely outcome is studying a low prestige program for those individuals with father's education lower than tertiary, those whose father has tertiary education are more likely to study an academically

prestigious program. In the second plot from Figure 2 we observe that those females from an academic track who have 'Very good' as average grade in secondary education will most likely study a highly prestigious program as long as their father has at least primary education. The differences in predicted probabilities grow with father's education. In contrast, those females whose father has no studies have more chances to end up in a low prestige study program.

Figure 2. Plots of predicted probabilities for those from academic track where EMI is satisfied.



Father's education: 1-without studies, 2-primary education, 3-secondary education and 4-tertiary education.

Table 4 reports the predicted probabilities to study a prestigious program for those individuals who followed a vocational track. We observe that parental background changes the most likely outcome for males with average grades 'Good' and 'Very good' in the secondary education. In the case of females, the same happens when they have 'Excellent' grade in secondary education. Note, however, that females with lower grades who followed a secondary vocational education are not affected by father's education in their chances for academically prestigious program. This can be an artifact of gender socialization roles apparently still existent in Spain.

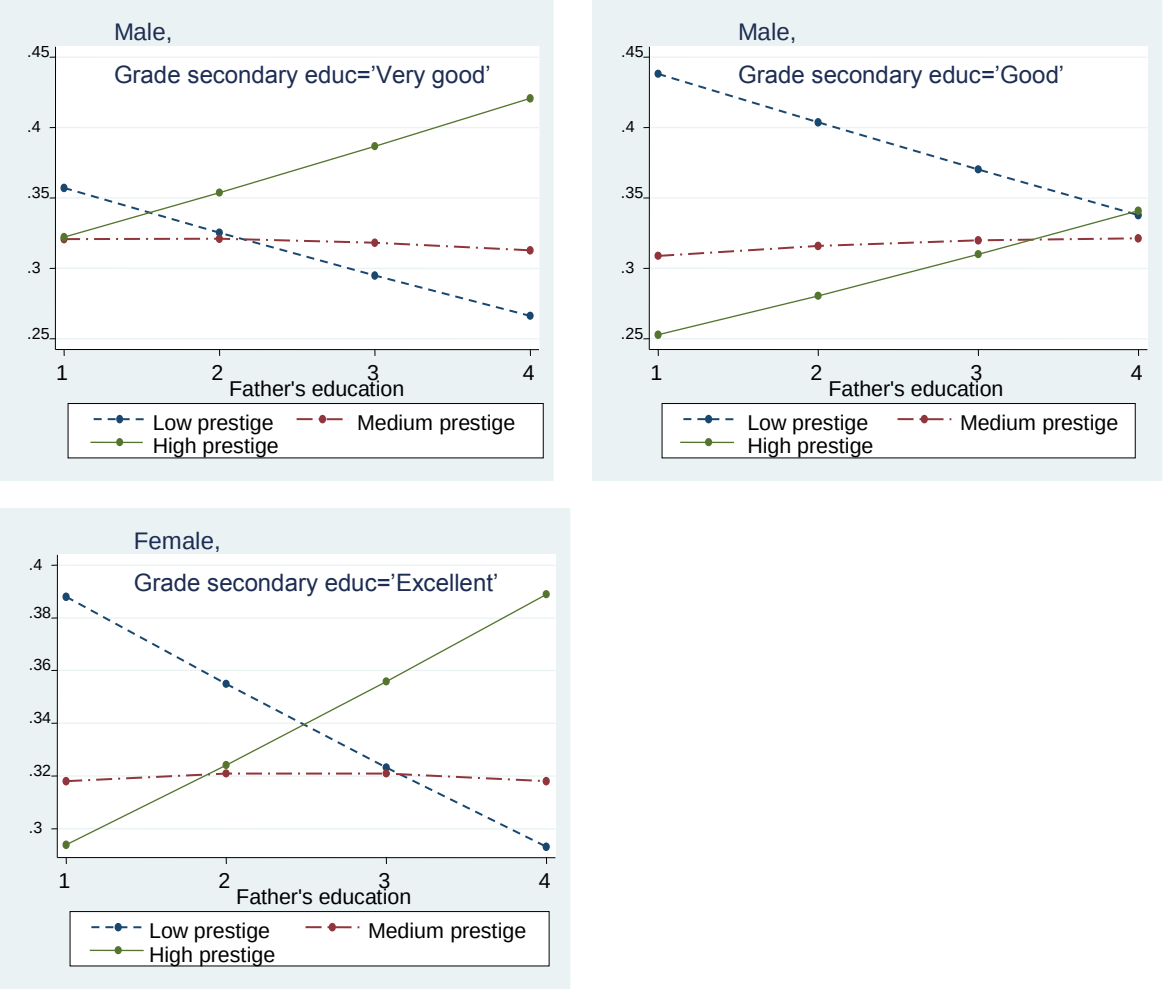
Table 4. Predicted probabilities of attending an academically prestigious program (vocational track, 'Licenciados' sample)

		Male with Vocational track			Female with Vocational track		
		Prestige levels of study program					
Grade in secondary educ	Father's education	high	medium	low	high	medium	low
1 'Pass'	No studies	0.19	0.28	0.52	0.13	0.23	0.64
	Primary	0.22	0.3	0.49	0.15	0.25	0.6
	Secondary	0.24	0.31	0.45	0.17	0.26	0.57
	Tertiary	0.27	0.31	0.42	0.19	0.28	0.53
2 'Good'	No studies	**0.25**	**0.31**	**0.44**	0.17	0.27	0.56
	Primary	**0.28**	**0.32**	**0.4**	0.2	0.28	0.52
	Secondary	**0.31**	**0.32**	**0.37**	0.22	0.3	0.49
	Tertiary	**0.34**	**0.32**	**0.34**	0.24	0.31	0.45
3 'Very good'	No studies	**0.32**	**0.32**	**0.36**	0.23	0.3	0.47
	Primary	**0.35**	**0.32**	**0.33**	0.25	0.31	0.44
	Secondary	**0.39**	**0.32**	**0.3**	0.28	0.32	0.4
	Tertiary	**0.42**	**0.31**	**0.27**	0.31	0.32	0.37
4 'Excellent'	No studies	0.4	0.32	0.28	**0.29**	**0.32**	**0.39**
	Primary	0.43	0.31	0.26	**0.32**	**0.32**	**0.35**
	Secondary	0.47	0.3	0.23	**0.36**	**0.32**	**0.32**
	Tertiary	0.51	0.29	0.21	**0.39**	**0.32**	**0.29**
5 'Excellent with honors'	No studies	0.48	0.3	0.22	0.37	0.32	0.31
	Primary	0.52	0.28	0.2	0.4	0.32	0.28
	Secondary	0.55	0.27	0.18	0.44	0.31	0.25
	Tertiary	0.59	0.26	0.16	0.47	0.3	0.23

Bolded where EMI is satisfied.

Figure 3 displays the predicted probabilities for those cases from the vocational track where EMI is satisfied. In contrast to the previous results, parental background changes the most likely outcome for those individuals with rather high average grade in secondary education when they studied vocational track. We observe that, in general, those males with 'Very good' average grade get to prestigious programs unless their father has no studies, in which case they get to low prestigious studies. For those males who obtained a 'Good' average grade in secondary education, only those with highly educated fathers will be slightly more likely to graduate from highly prestigious programs. In the case of females results show that those with 'Excellent' grade whose father has at most primary education will most likely study in a low prestige program, while those whose father has secondary or tertiary education will be more likely to study in a highly prestigious program.

Figure 3. Plots of predicted probabilities for those from vocational track where EMI is satisfied.



Father's education: 1-without studies, 2-primary education, 3-secondary education and 4-tertiary education.

5. Conclusions

Spain has seen a large educational expansion in the last decades, which has also occurred in tertiary education since the Act on University Reform (*Ley de Reforma Universitaria, LRU*) in 1983. In 2008 over 45% of women and 30% of men aged 20 were enrolled in tertiary education. Notwithstanding the increase in the access to university experienced during last decades, we have found that equality of opportunities is hindered by the influence of parental background on the choice of tertiary education program. Understanding the role of parental background is especially important in Spain given that more than 47% of parents have at most primary education.

In this paper we analyze two educational choices: long vs. short program and prestige of the program. Our results show that those individuals with better-educated parents are more likely to

choose a long program. Moreover, among those who chose a long program, having better educated parents, leads to more chances to study in an academically prestigious program.

In order to investigate the strength of the parental influence on educational outcomes of individuals, we compute predicted probabilities and find that for some cases parental background changes the most likely outcome of individuals from short to long program and from low to high prestige tertiary program. These results support the effectively maintained inequality thesis of Lucas (2001).

Our results show that parental education is a strong determinant of studying a long program for those individuals with low grades from academic secondary track as well as for those with high grades from vocational secondary track. With regards to prestige of the program, when individuals followed the academic secondary education track, parental background changes the most likely outcome for those males with the lowest grades and for those females with 'Very good' grade. In the case of those who studied the vocational track in secondary education, parental background strongly influences their program prestige for males with 'Good' or 'Very good' grades and for females with 'Excellent' grade in secondary education.

The optimist side from our analysis is that ability (measured as average grade in secondary education) also has an important role in explaining the choice of study program. Those with best grades are always more likely to study a highly academically prestigious program.

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