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Influence of the pandemic on university access for men and women: the case of Santa Cruz de Tenerife (Spain)

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Abstract: The purpose of this article is to analyse the influence of the pandemic on the grades obtained in different subjects that comprise the University entrance exam. With this purpose, we analysed a significant database containing grades related to four consecutive academic annual editions of the entrance exam to the University of La Laguna (Canary Islands, Spain) divided into two periods, pre-pandemic (academic years 2017-2018 and 2018-2019) and the post-pandemic (2019-2020 and 2020-2021). Bivariate data analysis along with multiple linear regression was performed on the data. According to the results, it is confirmed that in the post-pandemic period some grades have suffered a significant boost, and it is also possible to detect the social impact of that increase in social variables, i.e. gender significant differences.

Keywords: gender inequalities, university education policies, pandemic.

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Introduction

Since the beginning of 2020, a global pandemic has emerged associated with the SARS-COV-2 virus. This situation abruptly changed social interaction in general, with enormous consequences in political, economic and educational life. As a result of the pandemic, virtual teaching activities (or at least a great part of it) have become a standard internationally. In some academic scenarios, student presence in the classroom has been also significantly reduced to avoid the spread of the virus. It is an urgent task to assess the extent to which the pandemic is going to modify our learning scenarios.

For this reason, in this study we will focus on the consequences of this pandemic in one of the key stages in the educational system: The University entrance exam and the resulting scores which determine not only access but also the final choice among degrees. This stage supposes the youth population aspect that will determine their future at a professional level, with a great implication to the study of the inequality of educational opportunities. In this sense, there have been many studies focused on this inequality and more specifically on the inequality of educational opportunities from the analysis of the school system, the social origin of the student body or other issues such as academic performance (Martínez García, 2007; Martínez García, 2008; Martínez García & Molina, 2019). In this context, we analysed a significant database containing grades related to four consecutive academic annual editions of the entrance exam to the University of La Laguna (Canary Islands, Spain) divided in two periods, pre-pandemic (academic years 2017-2018 and 2018-2019) and the post-pandemic (2019-2020 and 2020-2021).

1. Literature review

Throughout their academic career, youth advance through different courses, acquiring competencies, knowledge and experiences that allow them to better understand the society in which they live and move, step by step, into subsequent job opportunities. Universities play a key role in modern societies and are suffering profound transformations in their structures (Mainardes et al., 2012), for that reason it is essential to explore specific policies that allow students to enter that system of education. The itinerary to be covered is defined and, in Spain, it is common for all students up to adolescence to the title of Compulsory Secondary Education (ESO). This itinerary allows them to choose from a list of subjects according to their interests. Once this academic title has been achieved, over the age of 16, it is time to decide which itinerary suits them, for the Baccalaureate (senior secondary school), as a preliminary step to future university studies. To access a university in Spain, once the students have obtained the Baccalaureate, over 18 years of age, it is necessary, from the academic year 2016-2017 (Ruiz-Lázaro, González Barbera & Gaviria Soto, 2021), to pass a test known as the Baccalaureate Assessment for University Access (EBAU) as university entrance exam. This test consists of two phases: general phase and specific phase. In the first phase, knowledge of certain

subjects is evaluated according to the chosen itinerary and in the second phase, other subjects are attended with the aim of increasing the grade already obtained in the first phase (Nieto Isidro, Martínez Abad & Rodríguez Conde, 2017). The specific phase of the test is voluntary (Troiano, Torrents, Sánchez-Gelabert & Daza, 2017). Each subject to be evaluated in the test consists of two options from which students must choose: A and B versions of the exam (López Lorente & Monteagudo Fernández, 2016).

One of the most studied elements within the sociology of education is how education is one of the elements of social mobility for students who come from families without a university degree (Britton, Dearden, Shephard & Vignoles, 2019; Walker, 2019) Therefore, it has been conceptualized and studied how access to higher education favours and improves the quality of life (Wei, 2020). Regulated education is, therefore, an investment (Martínez García & Molina, 2019) and among other issues, usually generates higher salaries at the highest educational levels (Martínez García, 2007). For these reasons and some more, this type of test is very important for students (Watts & García Carbonell, 1999) and access to the university is the most significant academic moment (Lorenzo Moledo, Argos González).

The current EBAU in Spain replaced the previous University Access Test (PAU) (Martínez-Artero, from Pro Bueno & Nortes Checa, 2021). The characteristics of the entrance exams have similarities and differences according to states, but their importance influences the previous academic year that gives them access (Amengual-Pizarro, 2009; Franco Mariscal, Oliva Martínez & Gil Montero, 2015; López Lorente & Monteagudo Fernández, 2016; Goberna, López & Pastor, 1985). These tests consist of different written exams on various subjects (Jia & Li, 2021), including a foreign language exam (Watts & García Carbonell, 1999).

The entire educational system is comprised of public schools dependent on a state along with private schools of diverse origins (Thapa, 2013). The students are distributed between the two options mentioned, with private schools being more expensive than public alternatives. Private centres can be financed independently or they can have public-funded as long as they adjust to various requirements established by the educational administration (Murillo, Belavi & Pinilla, 2018). The choice of an academic centre is an option to develop an educational path that the families of the students consider. In any case, Fack & Grenet (2010) have specified that the good grades of the students of certain schools have an impact on the price of homes in the area where these schools are located. Private schools are preferably concentrated in urban places with a higher level of family education (Fernández Enguita, 2008).

The possibility of studying in a private school implies economic costs that not all families can afford (Murillo et al, 2018). The choice to study in a private centre is based, among other issues, on the perceived quality of public schools, but the presence of the former could be positive for the latter due to the competitiveness that it generates and hence by increasing the quality of public schools (Couch, Shughart & Williams, 1993) and also the same competitiveness could improve the academic results of students in public schools (Thapa, 2013). Students from families with

limited economic resources are concentrated in public schools (Ardila-Franco & Soto-Arango, 2020; Granados Vásquez & Auza Benavides, 2012). The lower economic availability could also prevent these families from assuming the costs of university degrees (Frenette, 2008) and could hinder the possibility of continuing to study when the university centres are not close to the family home (Frenette, 2004). With a lower family's economic capacity, it will be difficult to see its members study (Martínez García & Molina, 2019). Specifically, in island territories, students living on islands with universities will probably go to university more than students living on islands without universities (Martínez García, 2008).

Students who study in private centres are supposed to have greater financial support (Barrera-Osorio, Galbert, Habyarimana & Sabarwal, 2020; Bertola, 2017; Murillo et al, 2018). In this sense, private school students obtain better grades than public school students in different routine tests (Cueto, Jacoby & Pollitt, 1997; Mejía-Mejía, 2016), test (Rodrigues de Oliveira, Belluzzo & Toldo Pazello, 2013; Sampaio, Fusco, Romero, Amaral & Capellini, 2017; Xu & Gulosino, 2006) or programs such as PISA (De Jorge-Moreno, 2016; Quiroz, Dari & Cervini, 2018). The level of family studies conditions the students' willingness to go to university (Parziale & Vatrella, 2018) and the family trajectory influences the educational performance of the students (Guimarães & Sampaio, 2013).

There is a link between the level of studies of fathers and mothers and that of their sons and daughters (Carabaña, 2015). Family educational level is so important that it makes students who obtain similar grades in adolescence more likely to go to university if their parents have a high educational level (Jerrim & Vignoles, 2015). In any case, regardless of the family's educational level, parents aspire for their sons and daughters to study at the university (Wilks & Wilson, 2012) because studying at the university subsequently influences the professional trajectory of the graduates (Anders, Henderson, Moulton & Sullivan, 2018). Thus we see how students from private schools, on average, obtain, in high school.

Regardless of the school of origin, to be able to access university studies, it is necessary to pass an admission exam, known as EBAU in Spain, as in Gaokao in China (Jia & Li, 2021), as a University Selection Test in Chile (Juarros, 2006), as Thanawiya amma in Egypt (Buckner, 2013), as School Leaving Certificate Exam in Nepal (Thapa, 2015) and as United States Exam in Russia (Francesconi, Slonimczyk & Yurko, 2019; Luk'yanova, 2012), among others. Admission exams are not recent; in Spain they have been carried out since the end of the 19th century with numerous changes and different names (González de Pablo, 2001). Admission exams can be national, regional or defined by universities and colleges, with differences between countries and times.

Likewise, public universities and private universities can be differentiated, also in their access, as in Costa Rica where the admission exam is only for public universities (Blanco & Sauma Chacón, 2020). These exams aim, in the middle of the admission process to a corresponding university, to order the students according to the grade obtained and with it to place the students preferably according to their interests. There are few current comparative studies of university entrance exam

grades between the different regions of Spain, although the one carried out in Asturias from 2004 to 2008 is worth mentioning, where it can be seen that the grades of public-school students are lower than the private in all the subjects analysed. (González-Vallinas, Álvarez).

In Spain, once the qualifications are known, students can apply for a place at a university that will have its own admission criteria (Revesado Carballares, 2018) in terms of the minimum qualification achieved that allows enrolment in the different degrees. There are degrees without a limit of places and others with a limit of places (Lorenzo Moledo et al, 2014). In any case, we must not lose sight of the fact that admission to universities is an environment of competitiveness (Wheeler, 2018) based on the grades obtained by students, limiting or not their possibilities of studying the desired degree.

It must be taken into account that the result obtained by the students in this admission exam can indicate how their subsequent performance in the university will be (Konečný, Basl, Mysliveček & Simonová, 2012) and the universities rely on it as an indicator (Espinoza, González, Sandoval, McGinn & Corradi, 2021). Students with limited economic resources, at the university, obtain lower grades (Troiano & Elias, 2014). Students from private schools obtain better grades in the university entrance exam than those from public schools (González-Vallinas et al, 2010; Guimarães & Sampaio, 2013; Thapa, 2015). Regarding sex, some studies affirm that women obtain better results in access to university (Buckner, 2013).

Regarding the influence of the pandemic on this type of university entrance exam, no specific references have been found that analyse its influence, either at a Spanish or international level, which motivates this article, as it reflects the influence of the pandemic on these grades and the different impacts depending on the sex of the student and the ownership of the study centre of origin of the students. With this, we intend to observe if the pandemic accentuates inequalities between social groups and quantify such impact.

2. Research methodology

We explored the database containing grades of all the students who took the EBAU test (Evaluation of the Baccalaureate for University Access) in academic years 2017-2018, 18-19, 19-20 and 20-21. This database has been provided by the Analysis and Planning Office of the University of La Laguna on September 22, 2021. It should be noted that this test is carried out by almost all of the students who want to access the University in the province of Santa Cruz de Tenerife (Canary Islands, Spain), which is highly representative of the students of that territory.

The subjects of English, Spanish Language and Literature II, History of Spain, Mathematics II, Mathematics Applied to Social Sciences II, and Chemistry have been selected for various reasons. First, the subjects that are common to the different itineraries were selected. Thus, English, Spanish Language, and Literature, II and History of Spain are taught in all access Itineraries to the University. On the other hand, the two Mathematics subjects were selected (Mathematics II corresponds to

the technical-scientific itinerary and Mathematics Applied to Social Sciences II of the Social Sciences itinerary) because they are subjects that are analysed at an international level (OECD, 2018). Finally, the Chemistry subject was chosen because it is the last one (along with the previous 5) that represents 5% of the sample, so the analyses continue to be somewhat representative.

To meet the objectives of the research, the evolution of the grades of each subject has been analysed according to different variables for two moments: the pre-pandemic moment (which groups the grades of courses 17-18 and 18-19) and the post-pandemic moment (which groups together grades 19-20 and 20-21). In this way, it is possible to see the effect of the pandemic in those moments.

In addition to the average grade according to the different moments, analyses were carried out to know the evolution, for each subject, according to sex (differentiated evolution between men and women) and according to the ownership of the educational centre (differentiated evolution between the students of public centres, State-funded private and private non-arranged).

Finally, to see the behavior of the average grades, a Multiple Linear Regression model has been carried out for each subject where the dependent variable is the average grade and the independent variables are owned by the student's centre of origin, when the test was carried out. (pre-pandemic and post-pandemic) and gender, including all variables as dummy variables. It should be noted that all the models meet the necessary assumptions for the application of the Multiple Linear Regression technique following the recommendations of Montgomery, Peck and Vining (2001) and Pardo Merino and Ruiz Díaz (2002). Regarding the total number of cases, for each subject it is the following: 20,785 for English, 20,955 for Spanish Language and Literature II, 20,955 for Spanish History, 11,325 for Mathematics II, 6,213 for Mathematics Applied to Social Sciences II and 8,697 for Chemistry. In this way, it is considered that the size of the database, for each subject, is sufficiently important to draw meaningful conclusions. The analysis of the results was carried out with the statistical package SPSS v.24, using the procedure of comparison of means (t-test for independent samples) and the Multiple Linear Regression, as appropriate.

3. Research results and discussion

We have organized the results in the following subsections, focusing on (1) significant variations of post-pandemic grades compared to pre-pandemic one, (2) relevant differences between male and female students, and (3) the influence of the type of secondary school of origin (ownership of the centre), along with a fourth section devoted to multilinear analysis.

3.1. Influence of the COVID-19 Pandemic on the EBAU common subject grades. Significant variations

As can be seen in table 1, the highest average grades of the period correspond to the subject of Spanish Language and Literature II, while the one with the lowest average

is Mathematics II and Mathematics Applied to Social Sciences II (these two the latter even have a year with an average grade of fewer than 5 points). As can be seen, from the academic year 18-19 to 19-20 when the exam is carried out in the midst of the pandemic caused by COVID-19), all subjects raise the mark, except for English and Mathematics II. However, in the second year after the pandemic (20-21), when students are examined with restrictive sanitary measures, in all subjects their grades increase considerably.

Table 1. Grades of the subjects according to the a.y. of completion. 2018-2021. Averages

	Academic year			
	17-18	**18-19**	**19-20**	**20-21**
English	6.746	6.636	5.957	6.154
Spanish Language and Literature II	7.424	7.331	7.404	7.461
History of Spain	6.007	6.029	6.273	6.319
Mathematics II	4.950	5.977	5.136	6.190
Mathematics Applied to Social Sciences II	5.084	4.377	5.343	5.349
Chemistry	5.374	5.359	6.109	6.270

In the following section, the means of the subjects are analysed, differentiating into two moments: two years prior to the pandemic (17-18 and 18-19) and two subsequent years (19-20 and 20-21), with the aim of analysing the influence of the pandemic on students' grades. As can be seen in Table 2, the differences in the pre and post-pandemic scores are significant.

In general, in all subjects, grades increase from one period to another, with the exception of English, where the average grade drops 0.63 points in pandemic years. It should be noted that the largest increases in scores occur in the subjects of Mathematics Applied to Social Sciences II and Chemistry, where the grade rises to 0.61 points in the first and 0.8 in the second.

Table 2. Grades of the subjects according to the moment in which the test is carried out 2018-2021 - averages

Subject	**Moment**	**N**	**Mean**	**Std. Deviation**	**Dif. Average**	**They assume variances**	**t**	**df**	**p-value**
English	Pre-Pandemic	9775	6.691	2.230	-0.635	Different	19.424	20479.93	.000
	Post-Pandemic	10707	6.056	2.447					
Spanish Language	Pre-Pandemic	9921	7.377	1.734	0.055	Different	-2.194	20686.66	.028

Subject	Moment	N	Mean	Std. Deviation	Dif. Average	They assume variances	t	df	p-value
and Literature II	Post-Pandemic	10770	7.432	1.863					
History of Spain	Pre-Pandemic	9897	6.018	2.444	0.278	Different	-7.722	20638	.000
	Post-Pandemic	10743	6.296	2.710					
Mathematics II	Pre-Pandemic	5378	5.465	2.522	0.193	Different	-3.924	11153.79	.000
	Post-Pandemic	5779	5.658	2.681					
Mathematics Applied to Social Sciences II	Pre-Pandemic	2747	4.730	2.531	0.616	Equal	-9.443	6099	.000
	Post-Pandemic	3354	5.346	2.540					
Chemistry	Pre-Pandemic	3876	5.366	2.572	0.822	Different	-14.064	8022.06	.000
	Post-Pandemic	4157	6.188	2.668					

3.2. Influence of the COVID-19 Pandemic by sex

Table 3 shows the data by subject for male and female students. With the exception of English and Mathematics II, in the pre-pandemic EBAU test for the rest of the subjects analysed, the grades are higher in women. However, when observing the evolution (see table 3) in women there are significant differences between the pre and post-pandemic grades in all subjects, while in men the difference in grade is not significant in Spanish Language and Literature II or in Mathematics II. This indicates that, based on the data, women were more significantly affected by the pandemic in their grades than men. This influence is observed in table 4 (where data are extracted from table 3 for clarity). The pandemic has caused women to increase their average grades to a greater extent than men. The Chemistry case is very important: women have scored one more point after the pandemic than before. Men "only" 0.5 more. Also, in English, the pandemic affected men more negatively than women. On the other hand, in the rest of the subjects, the increase in the average grades of women was higher than that of men. In conclusion, women obtained a higher score in the EBAU grades in general terms compared to men.

Table 3. Grades of the subjects according to sex and the time in which the test is carried out - 2018-2021

			N	Mean	Std. Deviation	Mean difference	Variances	S.I.G
Men	English	Pre-Pandemic	4271	6.838	2.092	-0.669	Different	.000
		Post-Pandemic	4714	6.169	2.327			
	Spanish Language and Literature II	Pre-Pandemic	4314	7.089	1.776	-0.059	Different	.124
		Post-Pandemic	4740	7.029	1.906			
	History of Spain	Pre-Pandemic	4299	5.829	2.402	0.263	Different	.000
		Post-Pandemic	4727	6.092	2.671			
	Mathematics II	Pre-Pandemic	2654	5.531	2.520	0.025	Different	.715
		Post-Pandemic	2920	5.557	2.684			
	Mathematics Applied to Social Sciences II	Pre-Pandemic	1095	4.642	2.475	0.600	Equal	.000
		Post-Pandemic	1383	5.241	2.519			
	Chemistry	Pre-Pandemic	1356	5.356	2.608	0.586	Different	.000
		Post-Pandemic	1452	5.942	2.736			
Women	English	Pre-Pandemic	5504	6.577	2.325	-0.610	Different	.000
		Post-Pandemic	5993	5.967	2.535			
	Spanish Language and Literature II	Pre-Pandemic	5607	7.500	1.667	0.150	Different	.000
		Post-Pandemic	6030	7.749	1.765			
	History of Spain	Pre-Pandemic	5598	6.163	2.466	0.294	Different	.000
		Post-Pandemic	6016	6.456	2.730			
	Mathematics II	Pre-Pandemic	2724	5.400	2.522	0.362	Different	.000
		Post-Pandemic	2859	5.762	2.676			
	Mathematics Applied to Social Sciences II	Pre-Pandemic	1652	4.788	2.567	0.631	Equal	.000
		Post-Pandemic	1971	5.419	2.553			
	Chemistry	Pre-Pandemic	2520	5.372	2.553	0.949	Equal	.000
		Post-Pandemic	2705	6,321	2,622			

Table 4. Increase in grades of the pre and post-pandemic subjects in which the test is carried out, according to sex - 2018-2021

	Men	Women
English	**-0.669 ***	**-0.610 ***
Spanish Language	-0.059	**0.150 ***
History	**0.263**	**0.294 ***
Math	0.025	**0.362 ***
ACCSS Math	**0.600 ***	**0.631 ***
Chemistry	**0.586 ***	**0.949 ***

*p<0.1

3.3. Influence of the COVID-19 pandemic according to public, private or state-funded private centres of origin

Table 5 shows the relationship between the centres according to their ownership and the average grades of the pre and post-pandemic subjects. According to the ownership, at the pre-pandemic moment, the highest grades in all the subjects were either from state-funded private centres (they have the highest average grades than the rest in History of Spain, Mathematics II, and Chemistry) or from private centres (They have the highest average grades in English, Spanish and Literature II and in Mathematics Applied to Social Sciences II). It is striking that public schools have lower average grades than the rest of the student body in the pre-pandemic moment. Table 6 shows the increases produced in the subjects according to the different centres. In English (the only one where the general average of pre and post-pandemic grades falls) where the grade falls the most from the pre-pandemic to the post-pandemic moment is in the public. In the rest of the subjects, none of the public subjects is the one that evolves the best. Quite the contrary, in Spanish Language and Literature II, History of Spain and Chemistry have lower growth than the rest of the subjects. Thus, in all cases, the highest growth corresponds to private centres. Therefore, the pandemic has "benefited", in terms of grades, more the private than the public centres.

Table 5. Grades of the subjects according to ownership of the centre and the time in which the test is carried out - 2018-2021 - averages.

			N	Mean	Std. Deviation	Dif. Average	Variances	t	df	p-value
Public	**English**	Pre-Pandemic	7768	6.47	2.254	.673	Different	18.26	16259.33	.000
		Post-Pandemic	8494	5.800	2.449	.673				
	Spanish Language and Literature II	Pre-Pandemic	7913	7.308	1.734	-.046	Different	-1.62	16496.99	.105
		Post-Pandemic	8586	7.354	1.881	-.046				
	History of Spain	Pre-Pandemic	7890	5.842	2.449	-.228	Different	-5.67	16444.880	.000

			N	Mean	Std. Deviation	Dif. Average	Variances	t	df	p-value
		Post-Pandemic	8563	6.070	2.710	-.228				
	Mathematics II	Pre-Pandemic	4142	5.216	2.511	-.201	Different	-3.60	8544.974	.000
		Post-Pandemic	4405	5.417	2.666	-.201				
	Mathematics Applied to Social Sciences II	Pre-Pandemic	2157	4.526	2.465	-.548	Equal	-7.59	4801	.000
		Post-Pandemic	2646	5.074	2.513	-.548				
	Chemistry	Pre-Pandemic	2911	5.154	2.576	-.799	Different	-11.77	5962.87	.000
		Post-Pandemic	3055	5.953	2.667	-.799				
State-funded private	**English**	Pre-Pandemic	1597	7.451	1.937	.499	Different	6.94	3321.79	.000
		Post-Pandemic	1735	6.952	2.212	.499				
	Spanish Language and Literature II	Pre-Pandemic	1597	7.649	1.702	-.134	Equal	-2.26	3327	.024
		Post-Pandemic	1732	7.784	1.729	-.134				
	History of Spain	Pre-Pandemic	1597	6.792	2.279	-.520	Different	-6.34	3322.87	.000
		Post-Pandemic	1728	7.312	2.451	-. 520				
	Mathematics II	Pre-Pandemic	984	6.425	2.352	-.176	Equal	-1.64	2041	.101
		Post-Pandemic	1059	6.601	2.478	-.176				
	Mathematics Applied to Social Sciences II	Pre-Pandemic	468	5.431	2.672	-1.101	Different	-6.97	927.09	.000
		Post-Pandemic	544	6.532	2.297	-1.101				
	Chemistry	Pre-Pandemic	695	6.301	2.384	-.945	Equal	-7.52	1426	.000
		Post-Pandemic	733	7.246	2.360	-.945				
Private	**English**	Pre-Pandemic	288	7.974	1.710	.292	Equal	2.02	600	.044
		Post-Pandemic	314	7.683	1.823	.292				
	Spanish Language and Literature II	Pre-Pandemic	286	7.672	1.740	-.126	Equal	-.86	575	.389
		Post-Pandemic	291	7.798	1.763	-.126				
	History of Spain	Pre-Pandemic	286	6.635	2.386	-.712	Equal	-3.51	575	.000
		Post-Pandemic	291	7.347	2.479	-.712				
	Mathematics II	Pre-Pandemic	172	5.991	2.475	-.621	Equal	-2.34	383	.020
		Post-Pandemic	213	6.612	2.680	-.621				
	Mathematics Applied to Social Sciences II	Pre-Pandemic	91	5.911	2.453	-.313	Equal	-.92	200	.358
		Post-Pandemic	111	6.223	2.359	-.313				
	Chemistry	Pre-Pandemic	206	5.308	2.526	-1.079	Equal	-4.47	456	.000
		Post-Pandemic	252	6.387	2.607	-1.079				

Table 6. Increase in the grades of the pre and post-pandemic subjects in which the test is carried out according to ownership of the centre - 2018-2021.

	Public	State-funded private	Private
English	**-0.673 ***	**-0.499***	**-0.292***
Tongue	0.046	**0.134 ***	0.126
History	**0.228***	**0.520***	**0.712 ***
Math	**0.201***	0.176	**0.621 ***

	Public	**State-funded private**	**Private**
ACCSSS Math	**0.548***	**1.101 ***	0.313
Chemistry	**0.799***	**0.945***	**1.079 ***

*p<0.1

3.4. Variables that influence the EBAU grade

Regarding the models developed, Table 7 shows a model for each subject, where the variable time of the test (pre and post-pandemic), sex and ownership of the educational centre of origin of the students are included as dependent variables. All the models are globally significant, although the R2 is relatively low. This is not a problem, since it is not intended to predict but to explain the grades of each subject. Thus, based on the pertinent bibliography (Reisinger, 1997), the results can be interpreted. In addition, in the error bar graphs made with the standardized residuals (review graph), it is observed that our model better explains students whose origin is from public schools. This is important since most of the students come from this type of centre.

Table 7. Models elaborated by Multiple Linear Regression (OLS)

	English	**Spanish Language and Literature II**	**History of Spain**	**Mathematics II**	**Mathematics applied to the CCSS II**	**Chemistry**
	b (standardized b)	*b (standardized b)*	*b (standardized b)*	*b (standardized b)*	*b (standardized b)*	*b (standardized b)*
Post-pandemic (ref. Pre-pandemic)	-0.634 (-0.134) ***	0.065 (0.018)) ***	0.292 (0.056)) ***	0.212 (0.041)) ***	0.636 (0.124)) ***	0.841 (0.159)) ***
Women (ref. Men)	-0.192 (-0.04)) ***	0.632 (0.174)) ***	0.379 (0.073)) ***	0.058 (0.011)	0.193 (0.037)) ***	0.246 (0.044)) ***
Public (ref. State-funded private)	-1.061 (-0.177)) ***	-0.412 (-0.09)) ***	-1.117 (-0.17)) ***	-1.197 (-0.19)) ***	-1.211 (-0.19)) ***	-1.232 (-0.198)) ***
Private (ref. State-funded private)	0.628 (0.045)) ***	0.03 (0.003)	-0.056 (-0.004)	-0.189 (-0.013)	0.053 (0.004)	-0.932 (-0.082)) ***
Constant	7.62) ***	7.35) ***	6.71) ***	6.38) ***	5.57) ***	6.20) ***
F (p-value)	317.977 (0.000)	200.388 (0.000)	189.506 (0.000)	103.808 (0.000)	83.251 (0.000)	121.742 (0.000)
R2	0.06	0.04	0.04	0.04	0.05	0.06
R2 adjusted	0.06	0.04	0.04	0.04	0.05	0.06
N	20196	20405	20355	10975	6017	7852

***: p-value <0.01
**: p-value <0.05
*: p-value <0.1

Regarding the model for the English grade, both the gender variable and the ownership variable are significant. Thus, people from public schools obtain 1 point less than students from private subsidized schools. In addition, in the post-pandemic stage, students tend to score 0.6 points less than before the pandemic. On the other hand, women tend to score fewer points than men (0.19 points less).

The model developed for the grade in Spanish Language and Literature II is made up of three significant variables: the time of the test, gender and ownership. Thus, after the pandemic, they tend to score 0.06 points more, while women obtain 0.6 points more than men in Language and students from public schools 0.4 points less than people from private subsidized schools. In this way, women and people from non-public centres tend to obtain higher grades in Language. In the case of History of Spain, all the variables included are significant in the model. Thus, after the pandemic, students tend to score 0.29 points more, while women 0.37 points more than men and students from public schools 1.1 points less than private subsidized schools. In this way, the people who have benefited the most after the pandemic are women and people from private subsidized centres.

The model developed for the subject of Mathematics II includes only the time of the test and the ownership of the educational centre of origin. Thus, after the pandemic, students tend to obtain 0.21 points more in Mathematics II, while people who come from public institutes obtain 1.19 points less than people who come from private subsidized centres. On the other hand, in the case of the subject of Mathematics Applied to Social Sciences II, all the variables contribute significant information to the model. Thus, after the pandemic, students tend to score 0.63 points more, while women tend to score 0.19 points more than men. Regarding ownership, students from public schools tend to score 1.2 points less than students from private subsidized schools. The last model analysed is that of the Chemistry subject. In it, the time of the test, gender and ownership are included in the model. Thus, students who took the test after the pandemic obtained 0.84 points more, while students from public centres obtained 1.2 points less than those from private subsidized centres. On the other hand, students from non-subsidized public centres also obtain 0.9 points less than those from subsidized schools. In addition, women tend to score 0.24 points more than men.

In summary, three ideas can be drawn based on multivariate analysis. In the first place, the time of the exam has an influence on all the grades analysed. Thus, the grade that most influences, positively, is in the subject of Chemistry, followed by Mathematics Applied to Social Sciences II, History of Spain and Mathematics II. On the other hand, the pandemic negatively affected the grades obtained in English (they tend to score 0.6 points less). Second, women generally score better than men in all subjects (except English, where the differences are not significant). Which they have the best grades, with respect to men, it is in History of Spain and Spanish Language and Literature II. Finally, with regard to ownership, public centres tend to always obtain lower grades than private subsidized centres in all the subjects analysed. In addition, in all the subjects (except for Spanish Language and Literature II) the grades of students from private centres are 1 point higher than those of public ones.

It is also important that in four of the six models there are no significant differences between students from subsidized public centres and students from non-subsidized private centres.

4. Conclusions

As has been observed in the results, the pandemic has affected in a notorious way the grades obtained in the entrance exam to the University of the students of the University of La Laguna, which on the other hand assesses most of the young people who want to enter the University in the province of Santa Cruz de Tenerife (Canary Islands, Spain).

Therefore, the pandemic, in general, has been an influential factor in the grades obtained in the university entrance exams. Thus, in the vast majority of subjects, there has been an increase in the last two academic years (19-20 and 20-21), where students received online teaching and where there have also been restrictive measures as a result of the pandemic. Therefore, the reduction of groups, as well as the hiring of more teachers, has increased the average grades of most of the subjects, among other reasons.

There is only one subject whose average grade has decreased significantly. This is English. Possible causes of this may be the difficulties of practicing that language independently. And it is that, with the pandemic, students have had to study more autonomously, and in a discipline such as English it is more difficult to monitor the subject from this formula.

What is crystal clear is that the pandemic, in general, has significantly raised the average grades of the subjects in terms of access to the University. Although it has occurred in most social groups, when analysing the data by sex and ownership of the educational centre of origin, substantial differences emerge that have meant that the same increase has not been applied to all students.

In this way, the results have shown the enormous influence of both sex and ownership of the educational centre of origin in terms of university access grades. This demonstration has been carried out both at the bivariate level and through a multivariate model based on a Multiple Linear Regression with qualitative predictors. Although the variance explained by the model is low, as explained in the results section, the explanatory (non-predictive) capacity of the university entrance grades is quite plausible.

Regarding the differences between men and women, the increase, in general, in the grade of women has been substantially greater than that of men. Thus, it could be said that in a pandemic it has been women who have notably increased their average grades in relation to men. In this sense, some previous studies (Buckner, 2013) inferred that women obtain better results with regard to access to the University, although this study does not measure the influence of the global pandemic.

Regarding the ownership of the educational centre of origin, the results show that this is a fundamental and key factor when we analyse the university entrance grades in different subjects. In this sense, in all cases, the grades of students from public

schools are always lower than those who study in private schools. Initially, in the pre-pandemic moment, the grades of the public centres were already lower than in the rest of the educational centres. What has caused the pandemic is that that difference becomes wider. Thus, the increase in student grades (after the pandemic) in private schools has been much greater than in public schools. Even in 5 of the six subjects, if the constructed model is observed.

There is a large amount of research that highlights that students from private and also state-funded private centres obtain better grades in routine tests (Cueto, Jacoby & Pollitt, 1997; Mejía-Mejía, 2016), test (Rodrigues de Oliveira, Belluzzo & Toldo Pazello , 2013; Sampaio, Fusco, Romero, Amaral & Capellini, 2017; Xu & Gulosino, 2006) or programs such as PISA (De Jorge-Moreno, 2016; Quiroz, Dari & Cervini, 2018; Androniceanu & Marton, 2021; Androniceanu, 2020). In addition, other investigations (González-Vallinas, Álvarez, Peiró i Gregori & San Fabián Maroto, 2010) highlight that, specifically in the Baccalaureate, the best grades, on average, are obtained in private centres (state-funded private centres or merely private ones). These differences are more important than it could appear a priori. If we take into account that students from families with limited economic resources are concentrated in public schools (Ardila-Franco & Soto-Arango, 2020; Granados Vásquez & Auza Benavides, 2012), what has caused the pandemic is that this social gap gets bigger. In this sense, the pandemic has caused the differences in the results of public and private centres to have a greater influence on the possibilities of social mobility of young people. In addition, given that grade influences admission to different academic disciplines, this competitive environment (Wheeler, 2018) based on the grades obtained can cause inequality of opportunities to increase, giving more priority to students from private schools than public ones.

In conclusion, the pandemic has only accentuated the processes that had been brewing prior to it. Thus, women have continued to increase the gap with men after the pandemic, and public school students increasingly face more obstacles to obtaining better grades. This issue is extremely important since it significantly affects both the inequality of educational opportunities and the life trajectories of young people.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be understood as a potential conflict of interest.

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Not the case.

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