

Differences About Reasons and Sources of Information for Choosing Degree Courses

Débora Areces and Luis J. Rodríguez-Muñiz
Universidad de Oviedo

Abstract

Background: Only a few months before starting university, more than 50% of Spanish high-school students do not know what course to choose. Data from the Ministry of Education show that dropout rates reach 40% in some Spanish communities. This study aims to analyse the most important reasons behind students' choices of degree course and the sources of information they use to help them choose depending on the type of the school and the field of study chosen. **Method:** A sample of 2,254 students from all over Spain completed two previously validated questionnaires. **Results:** The results showed that in general terms, intrinsic motives were more highly valued. The sources of information that students used most and rated more highly were university websites and family advice. Students from private schools rated guidance activities organized by universities more highly than students from state schools. Mann-Whitney U and Kruskal-Wallis statistics showed that the intrinsic component was more highly valued by students who wanted to study degrees in the fields of Arts and Humanities or Services. **Conclusions:** These findings provide quality information that may be used to improve the effectiveness of guidance counselling activities.

Keywords: Choice of degree course, counselling, high school students, information sources, motivation, student personnel services, university.

Resumen

Diferencias en las Motivaciones y las Fuentes Consultadas Para Elegir Estudios Universitarios. Antecedentes: a pocos meses de realizar la matrícula, más del 50% de los estudiantes españoles de Bachillerato no sabe qué carrera elegir. Los datos del Ministerio de Educación muestran que las tasas de abandono llegan al 40% en algunas comunidades españolas. Este estudio pretende analizar los motivos y fuentes más relevantes durante la elección de carrera universitaria según la titularidad del centro educativo y el campo de estudio elegido. **Método:** participaron un total de 2.254 estudiantes de Bachillerato a los que se le aplicaron dos cuestionarios previamente validados. **Resultados:** los resultados mostraron que las motivaciones de tipo intrínseco son las mejor valoradas. En cuanto a las fuentes de información, las más utilizadas y valoradas son las páginas web de las universidades y el consejo de las familias, siendo las actividades de orientación de las universidades más valoradas por los estudiantes de la red privada y concertada que por los de la pública. Los estadísticos U de Mann-Whitney y Kruskal-Wallis revelaron que existe una mayor relevancia de la componente intrínseca en los estudiantes que desean cursar grados de Artes y Humanidades o de Servicios. **Conclusiones:** estos hallazgos aportan información de calidad para mejorar la eficiencia de las actividades orientación.

Palabras clave: elección de estudios, estudiantes de Bachillerato, fuentes de información, motivación, orientación, servicios de estudiantes, universidad.

Why students choose one degree course or another has been the object of various studies (Canales & Ríos, 2018; Savage et al., 2011) as choosing a degree course means a process of self-discovery which involves different types of variables in order to make a good decision (Lorenzo et al., 2014). When a person makes a good decision about their academic future, it leads to a self-confirming process and the student is satisfied (Pérez-Morán et al., 2013). In contrast, making a bad decision can produce two main consequences; starting again on a different course (which means another choice, and the student being able to deal with the time lag

that involves), or dropping out completely from university, which can have significant negative consequences.

Criado (2008) noted that, only a few months before university courses begin, more than 50% of eligible high-school students do not know what degree they will do. This uncertainty about their academic future can have serious repercussions on how their time at university progresses. In fact, the Ministry of Education has reported rates of dropout from university as high as 40% in some autonomous communities in Spain (Álvarez et al., 2006). Canales and Ríos (2018) reported that one of the main factors explaining students' dropping out of university courses was a lack of vocational clarity. Bethencourt et al. (2008) indicated that students' motivation towards the course they are enrolled on, their capacity for effort, course requirements, and satisfaction with the course they are doing, were key variables in students successfully completing university degrees. Vocational guidance counselling is therefore an indispensable element helping students to make

good decisions about their future at university (Martínez et al., 2016).

In this regard, it is essential to find information in order to make a decision that is suited to the individual and avoid future dropout (Bethencourt et al., 2008; Carvajal & Cervantes, 2018). A large proportion of students report feeling confused and uninformed about the characteristics of university courses (Escanés et al., 2014) as the sources of information they use can have inconsistencies and inaccuracies that they do not know how to resolve (Font-Mayolas & Masferrer, 2010). National and international studies (Fondevila-Gascón et al., 2015) have confirmed that the most useful sources of information for students are basically: (1) those close to the student (mainly family, friends, and school guidance counsellors) and (2) the information available on the internet about the different courses offered by different universities. These results are in line with previous research (Flores, 2009; Ramos-Galarza et al., 2017) indicating that young people consider information published on the internet significantly more than other, more traditional sources, such as brochures or prospectuses.

Given the findings of previous research, and in order to reduce the proportion of students who drop out of university courses in the first few years, in 2016 the members of the SIOU (University Information and Counselling Service) network agreed on the need for an instrument with two main objectives: (1) determine the main reasons why students choose a given course, and (2) analyse the use high-school students make of sources of information about their academic future and how useful they find them. With regard to the first objective (Rodríguez-Muñiz et al., 2019), results of studies have shown that vocational aspect and personal interests are the most influential when deciding on a degree course. In terms of the second objective, studies (Areces et al., 2016) indicate that the two sources of information that students rate as most used and most useful are: (1) information from university websites and (2) information from the students' parents.

However, those results were from limited samples, made up solely of students from the Principality of Asturias. For this reason, the present study has three key objectives: (1) analyse the most important reasons in university course choice and the sources of information that are consulted most; (2) determine whether there are differences in the types of reasons or the sources of information depending on the type of school the students attend; and (3) determine whether there are differences in the reasons for choosing a course depending on the field of study at university.

Method

Participants

A total of 2,254 students participated in the study (43.4% men, 56.6% women) aged between 17 and 27 years old ($M = 17.51$; $SD = 2.34$). All of the participants were in high school in various autonomous communities in Spain (Table 1).

A fifth (20.2%) of the sample attended mixed schools (state – funded private schools) a little over a quarter (27.5%) attended private schools, and the remaining 52.3% attended state-funded schools. In the final two years of high school in Spain (*Bachillerato*) students follow different branches which affect the specific mix of subjects they study. In our sample 1.4% of the students were doing the arts branch, 11.1% were doing the humanities branch, 30% were doing the social sciences branch, and 57.5% were doing the science-technology branch.

Autonomous Community	N	%
Murcia	2	0.09
La Rioja	66	2.93
Galicia	72	3.19
Extremadura	1	0.04
Navarra	67	2.97
Madrid	379	16.81
Catalonia	3	0.13
Castilla-La Mancha	83	3.68
Castilla y León	1154	51.20
Cantabria	73	3.24
Asturias	296	13.13
Aragón	57	2.53
Andalucía	1	0.04

Instruments

We used two scales that were designed *ad hoc* for this study by the SIOU group and the research team. These scales have been shown to have good psychometric properties (Areces et al., 2016; Rodríguez-Muñiz et al., 2019). The “Reasons for Choosing a University Course” scale is made up of 16 items with a 10-point Likert-type response where 1 means “completely disagree” and 10 means “completely agree”. In our study, the “Reasons for Choosing a University Course” demonstrated good reliability ($\alpha = .788$).

The “Sources of Information” scale is made up of 17 items with 10-point Likert-type responses which are given twice: to score how often each source was used and to rate how useful they were. A score of 1 means “not used or not useful”, and a score of 10 means “used a lot or very useful”. Evaluating the reliability of the use of sources of information in the “Sources of Information” scale gave a good reliability value ($\alpha = .855$). The reliability of the usefulness of the sources via the “Sources of Information” scale also demonstrated good reliability ($\alpha = .884$).

Procedure

We used intentional, non-random sampling from the population of Spanish students studying Bachillerato. Through the SIOU network, in collaboration with CRUE-Spanish Universities [a non-profit organization of 76 Spanish universities], we launched a drive for collaboration from the various schools. The services that make up SIOU deal with very different situations in each university (Vidal et al., 2002), and there are significant differences in their relationships with the secondary education area, which means that the sample was not balanced proportional to the population in each autonomous community.

Once they had signed their informed consent, the teachers charged with administering the questionnaires received training and guidelines for correct administration. Both instruments were applied via a web page, hosted on a University of Murcia server, and accessible via desktop (computers and consoles) and mobile (smartphones, laptops, tablets, etc.) devices in order to facilitate the greatest participation possible. Data collection was during the final term of the 2017/18 school year.

Data Analysis

First, we performed a descriptive analysis of the items. Given that the scores did not follow a normal distribution (Kolmogorov-Smirnov tests with p values $< .0009$) and were strongly asymmetrical, we used non-parametric tests. More specifically, we used the Kruskal-Wallis test to examine the differences in scale scores according to the type of school. Finally, we descriptively analysed the “Reasons for Choosing a University Course” scale according to the field of study that the students chose (in this case, and given the notable imbalance in the sample, we did not perform inferential analysis).

The data were analysed using SPSS 23v. (Arbuckle, 2015).

Results

Tables 2 and 3 show the descriptive statistics for the “Reasons for Choosing a University Course” scale and for scales about the use and usefulness of “Sources of Information”.

In line with the first of our objectives, the results from the “Reasons for Choosing a University Course” (Table 2) show that Item 5 had the highest score, followed by Items 6 and 16 which had similarly high scores. Intrinsic motivations related to vocational aspects and personal interests (“because I like the course”, “I have a natural ability for this type of course”, and “I want to know more about this field”) were rated more highly than other types of extrinsic motivations. The highest rated of these latter reasons was Item 4, about possible future job prospects.

In terms of the use and usefulness of the sources of information (Tables 3 and 4), we saw that the highest scoring items were consistent. In other words, the most frequently-used sources of information were also those that students felt were most useful. The two most used, and most useful, sources for students were family advice and information from university web pages. The least used, and least useful, source of information was the guidance activities carried out by local government.

Items in the “Reasons for choosing a university course” scale	M	DT
1. Advice and opinions from parents	4.81	3.03
2. Nearness to the family home	3.97	3.2
3. Friends’ opinions	3.04	2.78
4. The job prospects that the course offers	6.69	2.58
5. Because I like the course	8.99	1.52
6. I have a natural ability for this type of course	8.04	1.83
7. It is what I like most and have always wanted to study	7.33	2.59
8. It is a prestigious course	5.27	3
9. The grades needed to get on the course are achievable	4.69	3.31
10. Advice from my teachers or tutors	3.77	3.06
11. Advice from school guidance counsellor (psychologist, educational psychologist at my school)	2.31	2.92
12. It is an easy course	2.09	2.55
13. It is a prestigious university	4.17	3.3
14. Family tradition (it is what my parent/s or close family members do)	1.57	2.7
15. I want to know more about this field	7.74	2.36
16. A professional I know who did this type of course	3.34	3.43

Scales on the use and usefulness of Sources of Information	Use		Usefulness	
	M	SD	M	SD
1. Guidance counsellor at school (psychologist, educational psychologist)	2.45	3.02	3.61	3.46
2. Teachers or form tutors at my school	3.85	3.13	4.76	3.28
3. Parents	5.82	3.22	6.35	3.12
4. Friends	4.20	3.09	4.54	3.13
5. Family members	4.47	3.23	5.07	3.24
6. University students or ex-university students	3.69	3.35	4.69	3.57
7. Guidance activities at my school	3.09	3.25	3.79	3.48
8. Presentations about university at my school	3.81	3.33	4.34	3.49
9. University guidance service	4.16	3.40	4.93	3.61
10. Student Fairs/Events (Aula, Unitour, etc.)	3.30	3.49	4.00	3.62
11. University open days	3.47	3.75	4.62	3.86
12. Practical activities or workshops in the university	1.81	2.89	2.97	3.48
13. Guidance activities from local government	1.03	2.17	1.87	2.80
14. Scientific Campus stays or educational camps	1.85	2.86	2.68	3.24
15. University web pages	5.98	3.32	6.40	3.18
16. Social networks	3.86	3.47	4.21	3.42
17. Radio, television, or the press	2.78	3.08	3.27	3.15
18. Brochures, prospectuses, and magazines	3.72	3.31	4.30	3.29

Differences by School Type

Table 4 shows the differences in the “Reasons for Choosing University Courses” scale between mixed, private, and state schools. Overall, the items had higher scores from students attending private and mixed schools than from students at state schools. The differences were statistically significant (via the Kruskal-Wallis test) in: “advice and opinions from parents”, “nearness to the family

Reasons	R(Con)	R(priv)	R(Pb)	χ^2 (d.f. = 2)	p
1	1206.10	1206.12	1048.06	33.788	<.001
2	1191.61	1096.14	1108.74	6.902	.032
3	1152.15	1159.47	1087.70	6.508	.037
4	1129.30	1196.74	1073.95	15.026	.001
5	1121.03	1135.71	1110.39	0.744	.689
6	1188.18	1196.70	1048.50	29.257	<.001
7	1126.47	1133.04	1104.88	0.915	.633
8	1139.05	1260.76	1020.93	57.944	<.001
9	1127.55	1072.03	1130.87	3.679	.159
10	1199.92	1176.60	1048.74	26.522	<.001
11	1159.08	1143.66	1077.19	8.420	.015
12	1136.04	1075.18	1125.91	3.569	.168
13	1205.73	1258.02	997.12	80.764	<.001
14	1202.70	1197.16	1033.59	51.557	<.001
15	1142.56	1155.33	1084.06	6.153	.046
16	1170.36	1220.62	1037.80	39.356	<.001

Note: R(con) = Median range for mixed schools; R(priv) = Median range for private schools; R(Pb) = Median range for state-funded schools

home”, “friends’ opinions”, “the job prospects the course offers”, “I have a natural ability for this type of course”, “it is a prestigious course”, “advice from my teachers”, “advice from school guidance counsellor”, “it is a prestigious university”, “family tradition”, “I want to know more about this field”, and “a professional I know who did this type of course”.

Table 5 shows that there were statistically significant differences between the types of schools analysed (mixed, private, and state) both in the use and the usefulness of the 18 sources of information in the scale.

Reasons for Choosing University Courses Depending on the Chosen Field of Study

In pursuit of our third objective, and given the huge range of degree course titles, we grouped the various courses that the students reported doing using the ISCED Fields (International Standard Classification of Education) (numbered from 1 to 10) and adding Code 0 to classify students who reported not yet having decided what course to study (Table 6), this field ended up being considerably larger than the others and unbalanced the sample, which means that it was not advisable to perform inferential analysis.

In the items related to intrinsic motivation, Item 5 (“because I like this course”) had the lowest score from those who had not decided which course to do yet (Field Code = 0) followed by Field 7 (Engineering, production, and construction) and 4 (Business, administration, and law). In contrast those who gave this item the highest scores were studying in Fields 2 (Arts and humanities), 10 (Services), and 9 (Health and wellbeing). Item 6 (“I have a natural ability for these kinds of courses”) was scored highest by students in Fields 10 (Services) and 2 (Arts and Humanities). Similarly,

Item 7 (“It is what I like most and have always wanted to study”) exhibited differences in scores greater than 2 points between those who scored it highest, 2 (Arts and Humanities) and 10 (Services), and those who rated it lowest, the undecided students and those in Field 4 (Business, administration, and law). Item 15 (“I want to know more about this field”) was scored higher by those studying Fields 2 (Arts and humanities) and 5 (Natural sciences, mathematics, and statistics).

The remaining items were grouped in the extrinsic component. The greatest differences in the item scores in this component were in Items 4,8,9, and 12. Specifically, in Item 4 (“job opportunities”) there were large differences between the highest scores, from students in Fields 4 (Business, administration, and law) and 6 (Information and communication technology), and the lowest scores, from students in education. In Item 8 (“the degree is prestigious”) there was another difference of almost three points between the highest scores, from students in Field 4 (Business, administration, and law), and the lowest scores, from students in Field 2 (Arts and humanities). Item 9 (“the grades needed to get on the course are achievable”) was highly rated by students in Field 6 (Information and communication technology) and given low scores by students in Field 9 (Health and wellbeing). Item 12 (“It is an easy course”) was scored most highly by students in Field 1 (Education).

Discussion

In terms of our first objective, which was to analyse the main reasons behind student’s choice of university degree courses, we confirmed that in line with previous studies (Bowden & Wood, 2011; Skatova & Ferguson, 2014), the most influential reasons when choosing a course of study were personal preferences and

Tabla 5
Differences between mixed, private, and state schools in the scales of use and usefulness of “Sources of Information”

Items	Use of Sources					Usefulness of Sources				
	R (Con)	R (priv)	R (Pb)	χ^2 (d.f.=2)	P	R (Con)	R (priv)	R (Pb)	χ^2 (d.f.=2)	P
1	1095.10	1108.13	1112.90	0.286	.867	795.56	789.66	845.87	5.670	.059
2	1214.80	1146.64	1023.64	35.456	<.001	860.19	867.60	807.64	5.945	.051
3	1211.10	1205.81	1002.16	58.490	<.001	922.52	926.29	777.99	38.539	<.001
4	1060.20	1145.95	1118.04	8.136	.017	822.39	875.73	821.33	4.514	.105
5	1151.39	1158.31	1018.55	26.355	<.001	873.99	873.80	781.33	15.723	<.001
6	1161.31	1148.63	1043.41	17.064	<.001	829.56	859.28	811.06	3.227	.199
7	1181.95	1226.71	989.64	71.529	<.001	871.27	886.64	768.33	24.055	<.001
8	1136.44	1201.95	1001.53	45.535	<.001	837.89	892.21	767.70	22.360	<.001
9	1184.88	1192.56	987.36	58.007	<.001	856.88	895.86	771.85	22.901	<.001
10	1182.82	1325.61	921.75	191.337	<.001	852.29	946.65	700.62	92.318	<.001
11	1174.79	1141.59	1009.45	33.544	<.001	827.92	842.45	769.55	8.923	.012
12	1124.24	1143.08	1024.01	23.705	<.001	792.94	816.65	754.45	6.629	.036
13	1087.00	1142.96	1049.35	15.318	<.001	761.11	799.55	755.39	3.918	.141
14	1131.48	1098.60	1052.10	7.600	.022	777.18	790.00	762.49	1.288	.525
15	1109.34	1161.19	1046.68	13.722	.001	835.51	867.27	843.29	1.117	.572
16	1095.83	1083.13	1067.44	0.753	.686	797.29	804.83	816.58	0.474	.789
17	1094.06	1147.30	1046.85	11.169	.004	785.04	843.82	778.21	6.784	.034
18	1115.65	1151.55	1018.16	21.092	<.001	825.70	863.32	779.81	10.074	.006

Note: R(con) = Median range for mixed schools; R(priv) = Median range for private schools; R(Pb) = Median range for state-funded schools

Table 6
Mean total score of the sample by ISCED Codes in the “Reasons for choosing a university course” scale

ISCED Code													
Reason	Total	0	1	2	3	4	5	6	7	8	9	10	Maximum Difference
1	4.81	5.18	4.69	3.67	3.96	5.37	4.19	4.32	5.07	3.69	4.85	4.38	1.70
2	3.97	4.32	4.71	3.28	3.31	4.26	3.85	3.95	3.79	3.53	3.44	3.14	1.57
3	3.04	3.43	3.17	2.50	2.55	2.99	2.64	3.32	2.61	2.44	2.87	2.82	0.99
4	6.69	6.82	6.34	4.61	5.80	7.68	6.16	7.74	6.79	5.28	7.28	6.14	3.13
5	8.99	8.49	9.29	9.62	9.35	8.90	9.31	9.18	8.83	9.44	9.53	9.56	1.13
6	8.04	7.58	8.42	8.55	8.22	8.15	8.19	7.92	7.84	8.28	8.46	9.04	1.46
7	7.33	6.60	7.96	8.20	7.61	7.03	7.65	7.85	7.09	8.44	8.09	8.59	1.99
8	5.27	4.98	4.24	3.53	5.19	6.37	5.34	5.78	6.11	5.13	5.96	5.33	2.84
9	4.69	5.10	5.63	4.04	4.64	4.65	4.20	6.01	5.03	4.13	3.29	4.61	2.72
10	3.77	4.16	3.92	3.41	3.24	3.73	4.16	3.86	3.60	3.03	3.23	3.10	1.13
ISCED Code													
Reason	Total	0	1	2	3	4	5	6	7	8	9	10	Maximum Difference
11	2.31	2.74	2.88	1.85	1.98	2.29	1.70	1.88	2.07	1.88	1.89	2.23	1.18
12	2.09	2.55	3.62	1.93	2.00	2.12	1.41	1.57	1.25	1.84	1.02	2.51	2.60
13	4.17	3.82	3.62	3.66	4.24	5.44	4.24	3.93	4.81	4.53	4.25	4.22	1.82
14	1.57	1.43	1.87	0.59	1.16	2.44	0.86	1.45	2.01	2.31	1.60	2.24	1.85
15	7.74	7.18	7.11	8.58	8.37	7.80	8.51	8.05	7.58	7.81	8.36	8.00	1.47
16	3.34	3.33	4.26	2.99	2.35	3.57	2.83	3.36	2.91	2.97	3.63	4.07	1.91
N	2254	811	143	155	124	243	129	87	163	32	298	69	–

interests. In other words, intrinsic motivations are more influential in the choice of degree course than extrinsic motivations (Pereles et al., 2020). Students make choices based on what they like and what interests them, and other kinds of factors are less important (Núñez & León, 2018).

Regarding our second objective, examining the differences based on the type of school (mixed, private, or state-funded), we saw that students from private or mixed schools paid more attention to the prestige of the university than students from state-funded schools. Students from state schools gave higher scores than the others to reasons such as “the grades needed to get on the course are achievable”. The results from this national sample showed the same pattern as the results, using the same scales, in a sample from the Principality of Asturias (Rodríguez-Muñiz et al., 2019).

The second part of our first objective was to determine which sources of information Bachillerato students used most and found most useful. We confirmed that sources that were most often consulted were also the sources that the students rated as the most useful. This suggests that the SIOU network should join these two scales together for future applications of the instrument. The most used, and most useful, of the eighteen sources analysed were university web pages and parents’ opinions. This shows how pre-university students prefer to use the internet rather than other, more traditional sources (Flores, 2009; Ramos-Galarza et al., 2017). In this regard, because university web pages were rated similarly to information from parents, universities need to design websites specifically dedicated to different courses, responding to future students’ questions and doubts. In terms of differences according to school type, we found that although there were no significant differences between the school types in the scores for vocational guidance activities carried out by the schools (either in

how much they were used or how useful they were), there were differences, in both use and usefulness, in the scores for guidance activities carried out by universities, with the higher scores from students in private and mixed schools. This leads us to wonder whether students in private and mixed schools might have received more information about vocational guidance activities outside of school, or better absorbed the information received. Our results are consistent with a previous study (Areces et al., 2016) which examined the most used and useful sources of information in schools in the Principality of Asturias.

Lastly, in terms of our third objective, the results indicate very different behaviours about reasons for choosing degree courses depending on the field of study the students end up in. Our study offers empirical confirmation of statements that are often heard informally about the greater or lesser weight of intrinsic and extrinsic motivations when it comes to choosing a course of study. We confirmed that the intrinsic component has much more weight for students who opt for Arts and humanities, along with those in the Services field (most of those responses were from students who had chosen careers in the military or state security services). We found a clear vocational component when it comes to choosing degrees and professions.

It is surprising that students who chose to study in the Education field did not give much weight to the intrinsic component, and gave the most weight to the reason of the courses being easy. These findings agree with results from previous studies, which indicated the perceived easiness of degrees in education as one of the main extrinsic motivations (Gratacós et al., 2017). Another important extrinsic motivation (although with lower scores than easiness) in these students was the influence of people close to them with this qualification. In fact, one study (Bertomeu et al., 2006) has

indicated the significant influence of family tradition or knowing someone who did this degree in students studying teaching.

The students who were interested in degrees in Field 5 (Natural sciences, mathematics, and statistics) gave the highest scores to teachers' advice. This is in line with the literature (Carrasco & Sánchez-Aguilar, 2016; Cerinsek et al., 2013), which reports teachers and parents as the most influential people for students who choose degrees related to science, technology, and mathematics.

It was also clear from our results that extrinsic motivations outside of the family and personal surroundings were more important for those students who chose to study Business, administration, and law, as well as Engineering, production, and construction. It was also apparent that some trends in the job market influence students, as students in the field of Information and communications technology gave this item very high scores (see, for example, InfoJobs, 2018). Other types of extrinsic motivations such as "having an achievable entrance grade", seemed to have hardly any influence on students interested in courses related to health and wellbeing. This is not unexpected, as almost all of those kinds of courses have limited places and require high grades.

Nonetheless, our study of students' reasons for choosing their courses by sector does allow us to formulate new hypotheses and raise new questions. For example: the fact that there is greater influence of family tradition in students who choose to study in the field of Business, administration, and law may be explained by the high proportion of self-employed and small family businesses in Spain. Similarly, it is worth asking whether the high value ascribed to professionals the student knows and family tradition in Services is related to families with service or military backgrounds. This indicates the need for a wider study to examine these hypotheses, among others that may be raised.

It is worth noting that the results of this study have already had notable practical repercussions. Both the SIOU network and the CRUE-Student Affairs section have begun to use this information to design more individualized plans, strengthening guidance on the more attractive aspects in each field of study in order to prevent dropout, and improving the quality of the information in the most

used channels of information such as websites, along with action directed at families.

Nonetheless, the results of this study must be interpreted in the light of its limitations. Firstly, despite using a larger sample (the largest in a national study of this type), its size still cannot be considered sufficiently representative, given the population who are doing the second year of the Bachillerato. The non-randomness of the sample has more impact on the representativeness, with clear differences in sample size between different autonomous communities, which limits the ability to extrapolate the data from communities with smaller sample sizes. We hope that in future research, greater participation from the different autonomous communities will improve the representativeness of the sample, allowing latent profile analysis to be performed in students who are on the point of choosing university degree courses. It will be similarly interesting to do longitudinal studies that would let us see what happens to these students after they start university and, more specifically, if those who most use the SIOU are less likely to believe they have made a mistake in their choice of course. In a similar way, with regard to the analysis using the ISCED Codes, because a large number of students had not decided on a course, our sample was unbalanced, and that means we must be cautious when generalizing our conclusions. Finally, with the aim of using language which is more inclusive and representative of the various types of families (two-parent, reconstituted, and extended, among others), the Spanish version of the Item "advice from father/mother" should be changed in future applications of the "Reasons for Choosing a University Course" to the more general "family advice".

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References

- Álvarez, P. R., Cabrera, L., González, M. C., & Bethencourt, J. T. (2006). Causas del abandono y prolongación de los estudios universitarios [Causes of dropout and extension of university studies]. *Paradigma*, 27(1), 349-363.
- Arbuckle, J. L. (2015). *SPSS (Statistical Package for the Social Sciences) (Version 23.0)* [Computer program]. SPSS.
- Areces, D., Rodríguez-Muñiz, L. J., De La Roca, Y., & Cueli, M. (2016). Information sources used by high school students in the college degree choice. *Psicothema*, 28(3), 253-259. <https://doi.org/10.7334/psicothema2016.76>
- Bertomeu, F. J., Canet, G., Gil, V., & Jarabo, A. (2006). Las motivaciones hacia los estudios de magisterio [Motivations for studying teaching]. *Fórum de recerca*, 12, 1-6.
- Bethencourt, J.T., Cabrera, L., Hernández, J.A., Álvarez, P., & González, M. (2008). Psychological and educational variables in university dropout. *Revista Electrónica de Investigación Psicoeducativa*, 6(3), 603-622. <https://doi.org/10.25115/ejrep.v6i16.1298>
- Bowden, J., & Wood, L. (2011). Sex doesn't matter: The role of gender in the formation of student-university relationships. *Journal of Marketing for Higher Education*, 21(2), 133-156. <https://doi.org/10.1080/08841241.2011.623731>
- Canales, A., & De los Ríos, D. (2018). Factores explicativos de la deserción universitaria [Explanatory factors for university dropout]. *Calidad en la Educación*, 26, 173-201. <https://doi.org/10.31619/caledu.n26.239>
- Carrasco Baltazar, L., & Sánchez Aguilar, M. (2016). Factores que favorecen la elección de las matemáticas como profesión entre mujeres estudiantes de la Universidad Veracruzana [Factors that encourage choosing mathematics as a profession in female students at the University of Veracruz]. *Perfiles educativos*, 38(151), 123-138.
- Carvajal, R. A., & Cervantes, C. T. (2018). Approaches to college dropout in Chile. *Educação e Pesquisa*, 44, Article e165743. <https://doi.org/10.1590/S1678-4634201708165743>
- Cerinsek, G., Hribar, T., Glodez, N., & Dolinsek, S. (2013). Which are my future career priorities and what influenced my choice of studying science, technology, engineering or mathematics? Some insights on educational choice—case of Slovenia. *International Journal of Science Education*, 35(17), 2999-3025. <https://doi.org/10.1080/09500693.2012.681813>

- Criado, E. (2008). El concepto de campo como herramienta metodológica [The field concept as a methodological tool]. *Revista Española de Investigaciones Sociológicas*, 123(1), 11-33.
- Escanés, G. A., Herrero, V., Merlino, A., & Ayllón, S. (2014). Deserción en educación a distancia: factores asociados a la elección de modalidad como desencadenantes del abandono universitario [Dropout in distance education: Factors associated with the choice of modality as triggers for university dropout]. *Virtualidad, Educación y Ciencia*, 9(4), 45-55.
- Flores, J. M. (2009). Nuevos modelos de comunicación, perfiles y tendencias en redes sociales [New models of communication, profiles and trends in social networks]. *Comunicar: Revista Científica de Educomunicación*, 17(33), 73-81. <https://doi.org/10.3916/c33-2009-02-007>
- Fondevila Gascón, J. F., Del Olmo, J. L., & Sierra, J. (2012). Búsqueda de información y redes sociales: el caso de la universidad [Searching for information and social networks: The case of the university]. *Revista de comunicación Vivat Academia*, 117, 497-511. <https://doi.org/10.15178/va.2011.117E.497-511>
- Font-Mayolas, S., & Masferrer, L. (2010). Conocimientos y actitudes de estudiantes universitarios respecto al Espacio Europeo de Educación Superior [University students' knowledge and attitudes towards the European Higher Education Area]. *Revista de Formación e Innovación Educativa Universitaria*, 3(2), 88-96.
- Gratacós, G., López-Gómez, E., Nocito, G., & Sastre, S. (2017). Why teach? Antecedents and consequences in Spain. In H. M. G. Watt, P. W. Richardson, & K. Smith (Eds.), *Current perspectives in social and behavioral sciences. Global perspectives on teacher motivation* (pp. 55-94). Cambridge University Press. <https://doi.org/10.1017/9781316225202.003>
- InfoJobs (2018, January 1). *State of the labor market in Spain*. https://nosotros.infojobs.net/wp-content/uploads/2019/05/Informe_Mercado_Laboral_InfoJobs_ESADE_2018.pdf
- Lorenzo, M., Argos, J., Hernández, J., & Vera, J. (2014). Access and Student Entrance to the University: Status and Improvement Proposals Facilitating Transit. *Educación XXI*, 17(1), 15-38. <https://doi.org/10.5944/educxx1.17.1.9951>
- Martínez, A., Zurita, F., Castro, M., Chacón, R., Hinojo, M. A., & Espejo, T. (2016). La elección de estudios superiores universitarios en estudiantes de último curso de bachillerato y ciclos formativos [Choosing higher university courses in students in the last year of high school and vocational training]. *Revista Electrónica Educare*, 20(1), 1-18. <https://doi.org/10.15359/ree.20-1.14>
- Núñez, J. L., & León, J. (2018). Probando las relaciones entre la motivación global, contextual y situacional: un estudio longitudinal de los efectos horizontal, arriba-abajo y abajo-arriba [Testing the relationships between global, contextual, and situational motivation: A longitudinal study of horizontal, top-down, and bottom-up effects]. *Revista de Psicodidáctica*, 23(1), 9-16. <https://doi.org/10.1016/j.psicod.2017.07.003>
- Pereles, A., Núñez, J. C., Rodríguez, C., Fernández, E., & Rosário, P. (2020). Personal and Instructional Variables Related to the Learning Process in Postgraduate Courses. *Psicothema*, 32(4), 525-532. <https://doi.org/10.7334/psicothema2020.189>
- Pérez Morán, J. C., Talavera, R., & Ramos, A. A. (2013, November 13-15). *Analysis of dropout, the choice process and career change in university students* [Conference Session]. Conferencia Latinoamericana sobre Abandono en la Educación Superior, México DF, MX, México. <https://revistas.utp.ac.pa/index.php/clabes/issue/view/65>
- Ramos-Galarza, C., Jadán-Guerrero, J., Paredes-Núñez, L., Bolaños-Pasquel, M., & Gómez-García, A. (2017). Procrastinación, adicción al internet y rendimiento académico de estudiantes universitarios ecuatorianos [Procrastination, internet addiction and academic performance of Ecuadorian university students]. *Estudios pedagógicos (Valdivia)*, 43(3), 275-289. <https://doi.org/10.4067/S0718-07052017000300016>
- Rodríguez-Muñiz, L. J., Areces, D., Suárez-Álvarez, J., Cueli, M., & Muñiz, J. (2019). ¿Qué motivos tienen los estudiantes de Bachillerato para elegir una carrera universitaria? [What are high-school students' reasons for choosing a university degree?]. *Revista de Psicología y Educación*, 14(1), 1-15. <https://doi.org/10.23923/rpye2019.01.167>
- Savage, N., Birch, R., & Noussi, E. (2011). Motivation of engineering students in higher education. *Engineering Education*, 6(2), 39-46. <https://doi.org/10.11120/ened.2011.06020039>
- Skatova, A., & Ferguson, E. (2014). Why do different people choose different university degrees? Motivation and the choice of degree. *Frontiers in Psychology*, 5, 1-15. <https://doi.org/10.3389/fpsyg.2014.01244>
- Vertsberger, D., & Gati, I. (2015). The effectiveness of sources of support in career decision-making: A two-year follow-up. *Journal of Vocational Behavior*, 89, 151-161. <https://doi.org/10.1016/j.jvb.2015.06.004>
- Vidal, J., Díez, G. M., & Vieira, M. J. (2002). Oferta de los servicios de orientación en las universidades españolas [Guidance services available in Spanish universities]. *Revista de Investigación Educativa*, 20(2), 431-448. <https://doi.org/10.6018/rie.20.2.99001>