

# *Job search methods and educational mismatch in University graduates in Spain*

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## **Abstract:**

This paper addresses the effectiveness of different job search strategies used by recent bachelor and master graduates in reducing their risk of vertical mismatch and skill/knowledge underutilization at their first job upon graduation.

In a first stage, we analyse two representative samples of recent graduates from Bachelor and Master programmes in Spanish universities interviewed at the University Graduate Job Placement Survey 2019. We assess university-assisted job search methods, other institutionally-supported methods and individual-driven ones. Overeducation and skills/knowledge underutilization risks are simultaneously predicted only for graduates who effectively searched for a job upon graduation via a bivariate probit model with sample selection. Our main findings show that university-supported job search methods (Internships and career employment offices) are the most effective ones in reducing mismatch risks in the first jobs upon graduation. Other institutionally assisted strategies (public employment services, job banks and public exams) also contribute to find well-matched positions. Job search strategies not supported by institutions – mass media and the Internet, contacting directly or indirectly with the employer and, specially, temporary employment agencies - are related with significantly higher risks of mismatch in the first graduate job.

In a second stage of the research we have drawn a subsample of recent university graduates from the quarterly files of the Spanish Labour Force Survey to describe the main job search methods university graduates deployed around the lock-down in 2020. The short-term changes in graduates' job search strategies induced by the lockdown seemed to be temporary and two quarters after the hardest restrictions had taken place the distribution of job search strategies had already returned to the pre-lockdown standards. Accordingly, overeducation rates did not substantially change over the period and were only slightly reduced during the lockdown, given the considerable job losses in hospitality and retail sectors.

**Keywords:** Vertical mismatch, Job search methods; Master programmes; Bachelor's degrees.

# 1. Introduction

Over the past decades the increase in the supply of highly qualified workers in Spain and other European countries has exceeded its demand, producing intense educational and skill mismatches in the graduate labour market (Muñoz de Bustillo, Sarkar, Sebastian and Antón (2018); Green and Helsenke, 2021). They result in pay penalties and erode graduates' job satisfaction (Naguib, Baruffinni and Maggi, 2019) among other consequences (Sloane and Macrovaras, 2020). Moreover, some graduates may become trapped in mismatched positions (Verhaest, Schatteman and Van Trier, 2015; Meroni and Vera-Toscano, 2017). This calls for public policies in higher education and employment – related areas to help graduates to find well-matched positions as well as acquiring relevant skills that will help them to meet employers' needs and expectations.

This paper focuses on the first of those objectives: identifying job search strategies that improve the quality of the matches (following Carroll and Tani, 2015; McGuinness, Whelan and Bergin, 2016, among others) in recent bachelor and master graduates. The effectiveness of universities' support to first graduate jobs via internships and universities placement services will be compared to other public - and sometimes, also private - institutions (public employment services (PES), job banks, job public exams). Also, the strategies individuals follow in a more informal way, such as ads in the media, Internet browsing, contacting the employer either directly or via personal contacts and self-employment will be assessed in this regard.

Empirical evidence comparing graduates from bachelor and master programmes is very scarce and may be used to indirectly estimate whether pursuing further education protects graduates from educational mismatch or intensifies their risk inasmuch it *fuels* their career expectations. By exploiting the University Graduate Job Placement Survey (EILU-2019, *Encuesta de Inserción Laboral de los Titulados Universitarios*) we analyse bachelor and master graduates at the same time. This adds valuable evidence to the already obtained in Author 1 and Author 2 (2018), Rodríguez-Esteban, Vidal and Vieira (2019), Di Meglio, Barge, Camiña and Moreno (2022) and Salas-Velasco (2021), all of which are based in the previous wave of data in 2014. Moreover, we study combinations of different ways to access the first graduate job, the length of the first job search and whether it started before or after graduation. As a result, we provide a thorough picture of the way graduates get their first jobs, what eases transitions into well-matched positions and how institutions may contribute to them.

We address two types of mismatch: First, vertical mismatch (overeducation), for which there is a vast body of evidence in developed countries, particularly among the graduate labour market (Quintini, 2011; Sloane and Mavromaras, 2020); Second, skills/knowledge underutilization (extensively surveyed in Somers, Cabus, Groot and van den Brink, 2019), which is more related to the content of the job than to the formal requirements to get it. Studying the two outcomes contributes to policy-relevant findings inasmuch some job search strategies might be effective in reducing one particular risk of mismatch only.

As an Appendix, we have extended the research by drawing a subsample of recent university graduates from the quarterly files of the Spanish Labour Force Survey (LFS) that intends to mirror the one in EILU – 2019. We aim to describe the main job search methods university graduates deployed around the lock-down in 2020. We intend to see changes in the profiles of job search that

may induce, in the future, higher (or lower) overeducation risks for recent university graduates. Unfortunately, there have been methodological changes in 2021 that impede to extend the comparison up to the latest year available. But our observation period is long enough to appreciate that the short-term changes in graduates' job search strategies induced by the lockdown were temporary and two quarters after the hardest restrictions had taken place the distribution of job search strategies had already returned to the pre-lockdown standards.

The content of the paper is as follows: in Section 2 we specify the working hypotheses; in Section 3 we present the data-set; in Section 4 we describe and discuss the results. The paper ends with the most relevant conclusions aimed to guide educational institutions and university students as well as proposals for future improvements in the analysis. In the Appendix Section we will describe the extraction of the sample from the Spanish LFS and the evolution in the job search patterns amongst both bachelor's degree and master's degree on-employed recent graduates.

## 2. Background and hypotheses

Educational mismatch has been largely explained by imperfect information and information asymmetries in the labour market (Stigler, 1962) that drive employers to use candidates' educational credentials as signals for productivity and screening devices (Spence, 1973). As a result of weak specific human capital endowments or labour market experience, recent graduates would accept jobs for which they are overeducated to later climb up the occupational ladder (Sicherman and Galor, 1990). This theoretical background has been mainly tested on vertical mismatch but could also apply to skills/knowledge underutilization.

Two important features of the job search process may contribute to graduates' perception of the opportunities in the labour market and the quality of their first match. The first one is the duration of the process, which is the key variable in most job search models stemming from the abovementioned theoretical approaches. Accepting a vacancy very early may signal either high skills endowments that explain the graduate finding a very good match right upon graduation or the need to enter paid work as soon as possible<sup>1</sup>. The second feature refers to the way(s) in which graduates find or access that vacancy. They are important because graduates deploy diverse job search methods to improve their information about available vacancies and signal themselves to prospective employers and those methods may differ in effectiveness (see Varshavskaya and Podverbnykh (2021) for an analysis of both incidence and effectiveness of job search methods in improving employment outcomes amongst graduates).

In this paper we cluster job search strategies into three categories: (a) those supported by universities (internship programs and job placement services); (b) those supported by public institutions different from universities (public employment services - PES, job banks and public examinations); and (c) those where individuals do not get support from institutions (ads in media and the Internet, contacting the employer directly or indirectly – via personal contacts –, using temporary work agencies and establishing self-employment). Two residual categories are (d) graduates who were

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<sup>1</sup> This is controlled for in our analysis in two ways: we control for sample selection on graduates whose first job was not a mere extension of the one they already had before graduation and we also control for early job searches – while undertaking the programme – versus job search processes starting right upon graduation.

directly contacted by the employer<sup>2</sup> and (e) graduates who declare having found their first job “in a different way”.

There is a large consensus in the international literature on the effectiveness of university careers services in improving job match quality in graduates (Blázquez and Mora (2010) in Catalonia; Carroll and Tani (2015) in Australia and McGuinness, Whelan and Bergin (2016) in 11 EU countries; Author 1 and Author 2 (2018) in Spain; Li, Harris and Sloane (2018) in Australia, Varshavskaya and Podverbnykh (2021) in Russia). But the evidence on the effectiveness of other types of job search methods in reducing mismatch risks is far from conclusive. In Switzerland Franzen and Hangartner (2006) found better matches in graduates using contact networks or contacting employers directly than in those deploying formal search methods. A similar outcome has been recently found in Russia for contacting the employer, but not so much for social networks (Varshavskaya and Podverbnykh (2021)). Kucel and Byrne (2008) found that state employment offices and informal networks in the UK were more related to poor quality matches than advertisements and private employment agencies. In Blázquez and Mora (2010) the greatest overeducation risks along the first years after graduation in Catalonia were found in graduates entering their first job via private employment agencies and public entry examinations, while using personal networks and advertisements were related to lower overeducation risks. Graduates accessing jobs via private employment agencies were also in particular risk of overeducation and overskilling – compared to contacting employers directly - in a set of EU countries drawn from the REFLEX (Flexible Professional in the Knowledge Society) in McGuinness *et al.* (2016). A similar result was found for Australian graduates in Li, Harris and Sloane (2018) concerning private employment agencies, while approaching the employer directly and through networks helped to avoid mismatch. Finally, self-employed workers would be expected to suffer less educational mismatch since they aim to provide themselves, whenever possible, with a proper graduate job, for which they need quite broad/transversal skills (Shevchuk, Strebkov and Davis, 2015). But Bender and Roche (2013) find a higher level of mismatch in self-employed workers than in employees, consistently with the use of self-employment to shelter against unemployment.

Our hypotheses concerning the broad effectiveness of job search strategies in reducing mismatch risks are in line with some of the abovementioned evidence and may be expressed as follows:

H1: Job search methods supported by universities are expected to be the most effective ones to reduce mismatch risks in the first job because of the quality of the information they provide to both graduates and prospective employers (Carroll and Tani, 2015). First graduate jobs that derived from an institutionally channelled internship would be particularly sheltered from mismatch risks.

H2: Job search methods supported by other public institutions like public employment services, will be also effective in reducing first job mismatch risks. Still, inasmuch they are not specialized in the graduate labour market, their contribution to enhance good matches will be milder than university-supported job search strategies.

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<sup>2</sup> Employers often use university placement offices and employment-related institutions to cherry-pick the best candidates and those who are addressed by their employers may be seen as a selection of the best graduates (McGuinness *et al.*, 2016). Still, in our samples interviewees who were contacted by their employer often declare as well having used public employment services or even contacted prospective employers. This would challenge that positive interpretation of being contacted by employers.

H3: Job banks and public exams rank graduates according to their skills and abilities. They usually give access to stable positions in the public sector, often requiring higher education. Sometimes the content of those jobs are not related to the graduate's specialization, but they are quite stable, retaining graduates in those mismatched positions. These job search strategies may therefore protect graduates from vertical mismatch at the expense of skills/knowledge underutilization.

H4: Job search methods not supported by institutions are expected to increase graduates' mismatch risks: posting ads in the media and the Internet, contacting the employer directly or via personal contacts are expected to provide lower quality information for prospective employers than institutionally-supported job search methods. Since they are open to all job seekers, they may not be effective in connecting job seekers with suitable vacancies. And in the case of temporary work agencies, the nature of the vacancies they are often asked to clear (mid- and low-qualified and temporary) make them particularly prone to drive graduates into poor matches.

H5: Self-employment is expected to increase the risk for educational mismatch under the premise that, in the context of high unemployment rates among recent graduates, necessity self-employment will be far more common than opportunity self-employment, particularly for recent graduates lacking the necessary experience and resources to launch a successful entrepreneurial project. Our results would therefore be more in line with Bender and Roche (2013) than with Shevchuk, Strebkov and Davis, (2015).

### **3. Data, indicators and statistic model**

#### ***a. Dataset and sample selection***

The University Graduate Job Placement Survey - EILU-2019 - provides academic and labour market related information from two separate random samples of individuals graduating in year 2014 from both Bachelor (31,651 observations representing nearly 233,000 graduates) and Master programmes (11,483 observations representing nearly 60,000 graduates). The fieldwork took place between July 2019 and October 2019. A detailed description of the dataset is displayed in the methodological guidelines provided by the National Statistical Office (INE, 2020).

The new questionnaire is addressed to individuals graduating in Spanish universities in 2014, so that the programmes they have accomplished are fully framed in the new European Higher Education Area (EHEA). These graduates entered the labour market after the Great Recession and their observed mismatch average levels are somehow lower than amongst those who graduated in 2010 (see Pérez Navarro, 2021).

Individuals who report at least one job upon graduation were asked how they had found their first job. Respondents were shown eleven non-mutually exclusive job search methods and were asked to tick the one(s) that helped them to find their first job after graduation.

Initially, we keep observations of graduates who report at least one job since graduation – around 98% of each subsample. After selecting observations with valid values in all variables involved in the multivariate analysis, the final samples have 28,826 observations of bachelor graduates and 10,588 observations of master graduates (94% of the original samples).

In order to better define our target group, we drop a non-negligible proportion of observations (28% in bachelor and 42% in master programmes) corresponding to graduates who declared having continued working for at least six months at the job they already held at graduation because they are the ones that really had to look for a first graduate job. Therefore, we only study the relation between the ways to find one's first graduate jobs and mismatch risks for those whose first job upon graduation did not merely consist in remaining at the one they already held. Since they are not a random sub-sample of the initial one, we control for potential sample selection in our multivariate analysis.

### ***b. The incidence of job mismatch across job search methods***

We identify two varieties of mismatch, vertical mismatch (overeducation) and skills/knowledge underutilization based on graduates' own perception about the quality of their first job match. Subjective definitions of mismatch be affected by misperception of own's level of skills (Scurry and Blenkinsopp, 2011) or job requirements, but they are the most common strategy to measure educational mismatch. We also estimate two different dimensions of mismatch at the same time, aiming to use one as a consistency check of the other and to find nuances that just one dimension would not detect. We define the two types of mismatch risk as follows:

- *Vertical mismatch (Overeducation)*: interviewees pinned the most appropriate level of education to perform their first job, from PhD to Compulsory education or less. *Vertical mismatch* was identified when Graduates reported the required level for their first job was below their own (34.8% of bachelor graduates and 68.4% of master graduates).
- *Skills/knowledge underutilization*: interviewees were asked whether, in their first job upon graduation, they used knowledge and/or skills obtained at university; those reporting not having used them (30.7% of bachelor graduates and 42.2% of master graduates) are considered to *underutilize* their knowledge/skills.

Table I shows mismatch rates in first job across job search methods, grouped by the three-fold classification explained above. The last columns display the incidence of the job search methods amongst bachelor and master graduates.

Finding one's first job via university-supported job search methods is quite exceptional: only 9% of Bachelor degrees graduates and 7.8% of master graduates declared their first job was a continuation of the internships they were immersed at the moment of graduation. This is a limited share of all graduates reporting pre-graduation internships, either integrated in the curriculum or not – see Table A.1 at the Appendix. In both sub-samples around 11% of graduates reported having found their first job via university job placement services. And only about one in ten declared internships and/or other services provided by their university as the only way to get their jobs. These methods are linked to the lowest incidence of vertical mismatch and knowledge/skills underutilization.

Search methods supported by institutions different from universities are also associated to lower levels of educational mismatch than the average except for public employment services (PES). About 10% of graduates declared to have accessed their first jobs via PES. Similarly, 12% of bachelors and 10,4% of master graduates obtained their job via public examinations, and job banks were relevant to get the first graduate job for 10% of interviewees. Both strategies were linked to lower risks of vertical mismatch in bachelor graduates, but not amongst master graduates. They were associated to lower rates of skills/knowledge underutilization in both types of graduates. Overall, the support of public institutions in job search are related to lower mismatch rates.

**TABLE I.** Incidence of mismatch by job search methods and prevalence of job search methods.

<i>Subsample of those who had to effectively look for a job</i>	<b>Bachelor</b>			<b>Master</b>		
	<b>Vertical mismatch</b>	<b>Skills/ knowledge</b>	<b>Share (%)</b>	<b>Vertical mismatch</b>	<b>Skills/ knowledge</b>	<b>Share (%)</b>
All interviewees	0.348	0.684	<i>100</i>	0.307	0.422	<i>100</i>
(1) University internships and job placement services						
Remained in the internship held at graduation	0.212	0.498	<i>9,0</i>	0.160	0.165	<i>7,8</i>
University job placement service	0.222	0.545	<i>11,1</i>	0.199	0.256	<i>10,8</i>
(2) Other institutional support						
Public employment services	0.358	0.736	<i>9,3</i>	0.295	0.455	<i>10,6</i>
Job banks	0.277	0.689	<i>9,4</i>	0.257	0.376	<i>9,6</i>
Prepared a public examination	0.256	0.719	<i>11,9</i>	0.242	0.364	<i>10,4</i>
(3) Individual job search methods						
Advertisements in newspapers and the Internet	0.410	0.740	<i>33,1</i>	0.361	0.491	<i>31,0</i>
Temporary work agencies	0.616	0.906	<i>5,5</i>	0.525	0.641	<i>4,0</i>
Contacting employer directly or via relatives, friends, etc.	0.404	0.719	<i>37,7</i>	0.343	0.468	<i>32,6</i>
Self-employment	0.288	0.648	<i>3,8</i>	0.248	0.391	<i>3,4</i>
Contacted by the employer	0.328	0.668	<i>19,4</i>	0.276	0.370	<i>15,8</i>
Other methods	0.289	0.486	<i>2,5</i>	0.293	0.287	<i>4,1</i>
Combination of job search methods						
Only (1) University internships and job placement services	0.186	0.474	<i>10,9</i>	0.163	0.196	<i>11,0</i>
Only (2) - Other institutional support	0.225	0.698	<i>13,8</i>	0.226	0.398	<i>16,9</i>
Combination of (1) and (2)	0.179	0.582	<i>4,6</i>	0.176	0.194	<i>4,2</i>
Combination of (1) and (3)	0.255	0.564	<i>1,1</i>	0.190	0.267	<i>0,9</i>
Combination of (1) (2) and (3)	0.315	0.780	<i>2,2</i>	0.267	0.328	<i>1,5</i>
Combination of (2) and (3)	0.423	0.772	<i>8,0</i>	0.348	0.470	<i>6,1</i>
Only (3) - Individual job search methods	0.423	0.740	<i>52,6</i>	0.371	0.503	<i>50,8</i>
Only contacted by the employer	0.304	0.660	<i>4,8</i>	0.256	0.398	<i>5,3</i>
Only by other methods	0.301	0.465	<i>2,0</i>	0.301	0.295	<i>3,3</i>
Observations		22525			6588	

Source: University Graduate Job Placement Survey 2019 (INE)..

Around 70% of graduates declare having found their jobs via individual-driven job search methods, and 50% declare to have found their first job via these types of strategies only. The most common ones are contacting the employer (family, friends) (37.7%/32.6%) and through job offers in the newspapers and/or the Internet (33.1%/31.0%). Education mismatch rates are about 6 to 8

percentage points higher amongst graduates declaring to have achieved their first job with those informal methods.

Presumably as a result of prior use diverse job search strategies 19.4% of bachelor graduates and 15.8% of master graduates reported being contacted directly by their employer as a way to access their first job upon graduation. Bachelor graduates contacted by employers seem not to be protected from education mismatch and in master graduates the observed average risk does not differ much from the average<sup>3</sup>. Temporary employment agencies are quite minoritarian ways to find the first job, probably act as a “last resort”, given the intense gap (beyond 20 percentage points) in education mismatch rates related to their use. Those self-employed in their first job were a small share of graduates and reported a slightly lower incidence of vertical mismatch and skills/knowledge underutilization than the average that will prove to be statistically non-significant in the multivariate analysis.

#### ***d - Multivariate analysis***

In order to disentangle the net relation between job search methods and educational mismatch, our multivariate strategy will consist on a bivariate probit model where the probabilities of graduates experiencing each type of mismatch are jointly estimated (similarly to Li *et al.* (2018), for Australian graduates). This allows to take into account potential non-observed features that influence both mismatch risks, such as characteristics of the university program - its market orientation, whether it is demanding or prestigious - (Kucel and Vilalta-Bufi, 2019), among others.

We estimate a third equation to capture the non-exogenous selection of graduates for whom we will estimate educational mismatch (those whose first graduate job did not merely consist on continuing for at least six months in the job they held at graduation).

We explore two specifications on the two sub-samples of graduates. In the first one the main explanatory variables are eleven dummy variables identifying each of the job search methods whose impact on mismatch risks we aim to estimate. In a second specification, job search strategies are captured by a categorical variable with nine values that comprise all combinations of job search methods.

Both specifications share the rest of control variables, grouped into four sets: demographic and interviewee’s family characteristics (gender, age, nationality and parental education); academic characteristics (type of university, field of study, geographical mobility during studies, scholarships and internships held); characteristics of the first job after graduation (professional status and working hours); and job search features (elapsed time from graduation to the first job and whether job search started before or after graduation). As for the selection equation, the explanatory variables include several personal and academic features that should contribute to explain the proneness to effectively look for a job upon graduation: gender, age, whether the interviewee’s and her parents’ were foreign

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<sup>3</sup> Unfortunately, it is not possible to detect why or how employers contacted the graduates. They may have screened candidates in universities services and/or public institutions or they may just react to prior contacts initiated by graduates. Who takes the initiative makes a large difference in terms of mismatch risks. They would be lower when employers look for suitable candidates to cover their vacancies.



born, parents' educational attainment, whether the interviewee held a previous bachelor or master degree and reason to study the bachelor or master program<sup>4</sup>.

The estimated outcomes are assumed to follow a multivariate normal distribution, and the three errors in the equation system would be inter-correlated if mismatch risks and the likelihood of effectively looking for a job upon graduation were affected by common non-observed forces. Cross-correlation across the main two equations errors is identified as  $\rho_{12}$  whereas cross-correlation between the selection equation and the main ones will be  $\rho_{13}$  and  $\rho_{23}$ . If they were found to be significant, this approach would provide consistent and efficient estimators for all the structural parameters, and the estimates would overcome those from single binary probit models to address educational mismatch, like in Author 1 and Author 2 (2018). We deploy the Stata module to implement conditional (recursive) mixed process estimator, **cmp** (Roodman, 2011).

## 4 - Results and discussion

Table IIA displays the results for the multivariate probit regression expressed as marginal effects of each job search method on vertical and skill/knowledge underutilization in both subsamples of graduates. They refer to the impact – expressed in percentage points – of each way of finding the first job (compared to non-reporting that particular job search method) on the average expected mismatch risks. They confirm the observed trends in average mismatch rates. In the coming paragraphs we follow the order of the hypotheses – presented in Section 2 - to discuss the most relevant findings in our analysis. The results for the rest of covariates are not shown due to space reasons but available upon request.

H1 (job search methods supported by universities will reduce mismatch risks more than the other two groups of search strategies) is confirmed in both mismatch risks for both types of graduates. First jobs derived from internships held at graduation are featured by the lowest mismatch risks, followed by those whose first job was obtained via career employment services. These results are in line with previous ones for bachelor graduates (Blázquez and Mora (2010); McGuinness *et al.* (2016); Author 1 and Author 2 (2018)) and are extended to master graduates, for whom this sort of institutional support is also crucial in the reduction of mismatch, particularly in to reduce skills and knowledge underutilization.

H2 (Job search methods supported by other institutions are expected to contribute to the quality of the first job match, but not as much as university – led strategies) is partially confirmed: finding the first job via PES is modestly effective in reducing skill/knowledge underutilization in Bachelor graduates only while is even associated with an increase in vertical mismatch among master graduates.

H3 (Using screening methods to access public sector jobs like job banks and preparing a public examination may reduce vertical educational mismatch risks while increasing horizontal mismatch) does not hold true. Those strategies contribute to reduce vertical education mismatch only in bachelor students while effectively reduce skills/knowledge utilization in both types of graduates, particularly for those who obtained a master degree.

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<sup>4</sup> The motivation to study higher education may be also relevant in the risk of mismatch (Sellami, Verhaest, Nonneman and Van Trier (2020)).

**TABLE II (A):** Marginal effects for job search methods on vertical mismatch and skills/knowledge underutilization. Bivariate probit models with sample selection.

	Bachelor		Master	
	Vertical mismatch	Skills / knowledge	Vertical mismatch	Skills / knowledge
(1) University internships and employment services				
Remained in the internship held at graduation	-0.0950***	-0.1238***	-0.1586***	-0.2183***
University job placement service	-0.0712***	-0.0666***	-0.1064***	-0.1343***
(2) Supported by other institutions				
Public employment services	-0.0067	-0.0303***	0.0415**	0.0091
Job banks	-0.0775***	-0.0475***	-0.0195	-0.0728***
Prepared a public examination	-0.0720***	-0.0433***	0.0344*	-0.0968***
(3) Individual job search methods				
Ads in newspapers and the Internet	0.0571***	0.0458***	0.0442***	0.0628***
Temporary work agencies	0.1586***	0.1275***	0.2450***	0.1907***
Contacting employer directly or via relatives / friends	0.0500***	0.0287***	0.0324**	0.0354**
Self-employment	-0.0077	-0.0255	-0.0140	-0.0628*
Directly contacted by employer	-0.0267***	-0.0241***	-0.0261*	-0.0536***
Other methods	-0.0347*	-0.0128	-0.1373***	-0.1230***
Quality of fit				
	Value	Prob > chi2	Value	Prob > chi2
Wald chi2(102)	10376.19	0.0000	2852.53	0.0000
Log likelihood	-35031.55		-13579.37	
Correlations across errors	Value	St. error	Value	St. error
<i>Rho</i> 12	0.7573	0.0069	0.5630	0.0175
<i>Rho</i> 13	-0.1872	0.0545	-0.0123	0.0789
<i>Rho</i> 23	-0.1499	0.0503	0.0252	0.0735
Observations (mismatch equation)	22,525		6,588	
Observations (selection equation)	28,826		10,588	

Source: University Graduate Job Placement Survey 2019 (INE). The list of control variables in educational mismatch equations as well as the specification of the selection equation are displayed in Section 3.d.

H4 (Individual-driven job search methods are expected to increase mismatch risks) is confirmed in the two types of mismatch and for both subsamples. In line with McGuinness *et al.* (2016), the most scarring way to get the first job is using temporary work agencies, given the kind of vacancies they contribute to cover. Answering advertisements in newspapers and the Internet is also related to higher mismatch risks, in line with part of the literature (see Blázquez and Mora, 2010; Carroll and Tani, 2015; Kucel and Byrne, 2008; McGuinness *et al.*, 2016 and Author 1 and Author 2, 2018). Contacting the employer directly or via personal contacts is also correlated with higher mismatch rates but at a lesser extent, since the information candidates get from (and exchange with) employers in this way will be of higher quality than the one they would obtain from ads and mass and social media, which are associated with larger increases in all sorts of educational mismatch than contacting employers.

H5 (Self-employment - setting up one's own business- is expected to increase educational mismatch risks) is not confirmed. We do not find any significant difference between those whose first job upon graduation consisted in starting one's own business and the rest of graduates. Maybe the premise that self-employment amongst early graduates is more related to necessities than to opportunities does not hold true. This result requires further attention in the future.

There is one final way of accessing the first job, being contacted by the employer, that is correlated with slightly lower mismatch risks. Since it is not possible to know the circumstances surrounding that contact, we cannot be fully sure that employers contact the best graduates they detect at university placement services (in line with McGuinness *et al.*, 2016), in which case they would definitely offer them very good matches. Employers may also contact graduates as a result of individual-driven job search methods (ie, a prior direct contact with the employer or interacting in social media), which would explain its rather timid impact on mismatch risks.

Given that the questionnaire allows graduates to report several channels to find their first jobs, it is possible to see their combinations. In Table IIB the marginal effects of different combinations of job search methods on mismatch risks are displayed. The reference category captures graduates who found their first job with individual-driven methods only, which represent about 50% of graduates (see Table 1). They are compared with those who reported job search strategies assisted by public institutions and universities.

**TABLE II (B):** Marginal effects for combinations of job search methods on vertical mismatch and skills/knowledge underutilization. Bivariate probit models with sample selection.

	Bachelor		Master	
	Vertical mismatch	Skills / knowledge	Vertical mismatch	Skills / knowledge
Ref: Only individual job search methods (3)				
Only (1) University internships and job placement services	-0.1612***	-0.1521***	-0.2444***	-0.2461***
Only (2) Other institutional support	-0.1487***	-0.1057***	-0.0238	-0.1230***
Combination of (1) and (2)	-0.1683***	-0.1300***	-0.0721	-0.2587***
Combination of (1) and (3)	-0.1117***	-0.1354***	-0.1059***	-0.1668***
Combination of (1) (2) and (3)	-0.1011***	-0.0880***	0.0641	-0.1393***
Combination of (2) and (3)	-0.0273**	-0.0368***	0.0286	-0.0594**
Only contacted by the employer	-0.0974***	-0.1003***	-0.0747***	-0.0954***
Only by other methods	-0.0941***	-0.0598***	-0.2050***	-0.1870***
Quality of fit				
	Value	Prob > chi2	Value	Prob > chi2
Wald chi2(102)	10243.72	0.0000	2789.35	0.0000
Log likelihood	-3510.977		-136.202	
Correlations across errors	Value	St. error	Value	St. error
<i>Rho12</i>	0.7590	0.0069	0.6454	0.0256
<i>Rho13</i>	-0.2025	0.0552	-0.0289	0.0778
<i>Rho23</i>	-0.1632	0.0509	0.0129	0.0731
Observations (mismatch equation)	22,525		6,588	
Observations	28,826		10,588	

Source: University Graduate Job Placement Survey 2019 (INE). The list of control variables in educational mismatch equations as well as the specification of the selection equation are displayed in Section 3.d.

The results confirm the relevant role of institutions, particularly universities, in improving the quality of first job matches. The only exception vertical mismatch in master graduates, for which public non-university institutions do not make any difference as regards vertical mismatch risk. Graduates who report both institutions and individual-driven job search strategies are less protected from educational mismatch risks than those who acknowledge their first job was achieved only with the help of institutions.

As regards other covariates (results available from the authors upon request), they are in line with previous evidence about socio-economic origin (in line with Turmo-Garuz *et al.*, 2019) and international mobility during the degree (partly in line with Pinto (2022)). Also the results for field of education are consistent with Salas-Velasco (2021), Rodríguez-Esteban *et al.* (2019) and Di Meglio *et al.* (2022), with graduates from Social Sciences and Law being significantly more prone to experience mismatch than the rest, and those from Health Sciences, followed by Engineering and Architecture-related studies. Finally, results regarding length of the elapsed period between graduation and employment were partly in line with Author 1 and Author 2 (2018), with longer job search periods resulting in higher mismatch risks.

## 5. Conclusions

This paper estimates the efficacy of a broad array of job search strategies to reduce vertical mismatch and skill/knowledge underutilization in the first job for bachelor and master degree graduates from Spain. Our results contribute to previous evidence on the returns to university-supported job search strategies, which are the most effective to palliate education mismatch in the graduate labour market. Universities knowledge about their graduates' level of competences and accumulated experience contribute to mitigate the asymmetry of information between candidates and prospective employers, improving the educational adjustment both Bachelor and Master graduates.

Internships are the most effective strategy to reduce initial graduates' mismatch risk, particularly in master graduates. Still, only about 10% of bachelor and master graduates accessed their first position directly from internships, which means that their overall impact, although quite positive, is rather limited. These results call for further collaboration with firms to enhance their positive influence on the initial steps in the labour market: universities should engage firms in the training of graduates and firms should be incentivized to absorb interns as employees in order to take advantage of the training provided to last year students and recent graduates.

Other institutions also contribute to reduce certain types of mismatch, but with uneven results: graduates who obtained their jobs via PES were less protected from overeducation than the average. Employers opening vacancies that require higher education might dismiss PES when looking for adequate candidates.

Because public sector is a very relevant employer in the graduate labour market job search methods giving access to public sector jobs (public examinations and job pools) tend to effectively reduce mismatch risks in bachelor graduates and only skills underutilization for master graduates. This result illustrates the gap between the quality of jobs in the public sector and private employers and the need for policies enhancing the creation of proper graduate jobs in the private sector.

Individual-driven strategies merely consisting informal mediation or browsing the labour market through widely available means (such as Internet, social networks, relatives or friends) result

in increasing risks of mismatch in the first graduate job. They may be good ways to find jobs but not the properly-matched ones. The result for temporary work agencies makes perfect sense because of the type of jobs they channel.

Only a limited share of graduates (about one in ten) report having obtained their first job through the most effective job search methods in reducing mismatch. At the same time, some of the most “damaging” job search methods quite extended (about half of graduates declare to have found their first jobs with individual-led strategies only). This calls again for large scale policies supporting the economic sectors that create highly qualified positions while contributing to growth, competitiveness and sustainability of the Spanish economy.

The availability of two sub-samples of graduates in bachelor and master programs sharing a nearly common questionnaire opens as well a whole range of possibilities to analyze the contribution of master programs to employability and, particularly, to the quality of graduates’ jobs. The results obtained here point at a potential mismatch between graduates’ expectations and the type of jobs available in the labour market, as well as the expectations of employers and their ability to adequately assign graduates into the positions they create. A proper evaluation of the rapid and intense expansion of postgraduate education in Spain deserves very much attention from both academics and Higher Education institutions.

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## Appendix:

The lockdowns in 2020 and the ulterior uncertain evolution of the economy made job search particularly challenging for young university graduates. Unfortunately, EILU-2019 has not been updated after the eruption of the pandemic. Therefore, despite we will miss some relevant features that are specific to university graduates, we will use general purpose data-sets that try to obtain up-to-date information. In the Labour Force Survey the samples are large enough to allow for the selection of specific sub-samples that mirror the ones in EU-SILC.

We have drawn one sample of recent bachelor's and master's university graduates (those graduating over the 5 years prior to the survey) from the quarterly files of the Labour Force Survey corresponding to the 2<sup>nd</sup> and 4<sup>th</sup> quarters in 2019 and 2020. This will allow us to find changes around the 2<sup>nd</sup> quarter of 2020, when the lockdown took place. Despite the files for 2021 are available at the moment of writing, they will not be used in the present analysis due to a very important methodological change: from the first quarter of 2021 interviewees who declare being looking for a job are asked to mention only up to three active job search methods they use. They can no longer select as many as they are actually use and need to chose the most relevant ones. As a result, the incidence of the diverse job search methods is not comparable to the pre-2021 one. Moreover, a new job search method has been introduced, namely, updating one's CV on an online site. Its inclusion is certainly very convenient, as it is quite a popular job search method amongst university graduates, but it aggravates the lack of comparability of the questions about job search methods.

There are two very relevant aspects of the Labour Force Survey that hinder a direct comparison with the EILU-2019: firstly, we can only observe *active job search methods deployed by job seekers* at the moment of the interview (regardless their employment status), but not *the way in which the current job was achieved*. Therefore our sample is mostly made by non-employed graduates or graduates who are dissatisfied in their jobs and are looking for a better one. This means we can compare pre-COVID and post-COVID patterns of job search methods but not their effectiveness in reducing education mismatch risks amongst recent graduates along the pandemics. Secondly, given that the LFS is a generalist survey, university-supported job search methods are not dealt with in the questionnaire.

Over the next tables we will describe the evolution of the labour market situation of recent graduates around the lockdown in 2020, their proneness to actively look for a job during that period and the incidence of the diverse methods contemplated in the LFS questionnaires. The analysis will be displayed for bachelor's and master's graduates separately.

The method of sample extraction has been the same in the four quarters. Sample sizes have shrank in line with the size of the original samples, with the number of complete interviews starting to decrease even before 2T-2020. There was an intense drop in 2T-2020 and sample sizes have not come back to their previous levels ever since (Table A-I). The weights and expansion ratios provided by the Spanish statistical office (INE) show that the size of the relevant population has not changed that much, though. They also show a relevant increase in the number of graduates from master's degrees over the observation period: the selected sub-sample in 2T-2019 was made by 3,193 bachelor's degree graduates (representing 1,027 thousand people) and 1,526 master graduates (accounting for 537 thousand people). In 4T-2020 the 2,842 bachelor's degree graduates accounted for 1,075 thousand individuals, and the 1,629 master graduates represented 644,5 thousand people.

Table 1 displays the evolution of the labour market situation in two different ways: it distinguishes first between employed graduates, NEET and non-employed graduates pursuing education; secondly,



non-employed graduates are classified according to previous working experience. The lock-down meant an increase in non-employment. For both bachelor's and master's sub-samples this meant an increase in NEET rates and in the share of experienced non-employed, since a non-negligible number of graduates lost their jobs. In the case of bachelor's graduates it also meant an increase in the share of non-employed pursuing education, and this trend remained after the lockdown. This is mostly due to an increase in the demand for graduate education. After the lockdown employment rates increased again and nearly returned to its pre-COVID levels for both types of graduates.

Table A-I. Evolution of the employment status for recent university graduates, 2T-2019 / 4T – 2020

		<b>2T-2019</b>	<b>4T-2019</b>	<b>2T-2020</b>	<b>4T-2020</b>
All grads	Employed	0.729	0.725	0.665	0.702
	NEET	0.165	0.168	0.228	0.178
	Non-employed in education	0.107	0.107	0.107	0.120
	<i>N. Obs</i>	4,709	4,842	4,322	4,471
Bachelor	Employed	0.672	0.663	0.600	0.654
	NEET	0.190	0.193	0.252	0.187
	Non-employed in education	0.137	0.143	0.147	0.159
	<i>N. Obs</i>	3,183	3,181	2,780	2,842
Master	Employed	0.836	0.837	0.772	0.782
	NEET	0.116	0.123	0.188	0.162
	Non-employed in education	0.047	0.040	0.040	0.056
	<i>N. Obs</i>	1,526	1,661	1,542	1,629
All grads	Employed	0.729	0.725	0.665	0.702
	Experienced non-employed	0.170	0.176	0.246	0.204
	Unexperienced non-employed	0.101	0.100	0.089	0.094
	<i>N. Obs</i>	4,709	4,842	4,322	4,471
Bachelor	Employed	0.672	0.663	0.600	0.654
	Experienced non-employed	0.196	0.205	0.284	0.224
	Unexperienced non-employed	0.131	0.131	0.116	0.122
	<i>N. Obs</i>	3,183	3,181	2,780	2,842
Master	Employed	0.836	0.837	0.772	0.782
	Experienced non-employed	0.121	0.121	0.183	0.171
	Unexperienced non-employed	0.043	0.042	0.045	0.047
	<i>N. Obs</i>	1,526	1,661	1,542	1,629

Source: Spanish Labour Force Survey, quarterly files, 2T-2019 to 4T-2020.

We may also check to which extent the lock-down disincentivised job search altogether and how the incidence of job search varied across employment statuses. Table A-II shows the incidence of job search along the observation period. As expected, non-employed individuals, particularly those who are not pursuing formal education or have already employment experience, are more prone to look for a job than those in paid employment. Regarding the evolution of job search, it dramatically fell during the lockdown while it afterwards increased so intensively that it reached higher levels than in the pre-COVID quarters across all labour market statuses. This is in itself a very interesting result and affects to both bachelor's and master graduates.

Table A-II. Incidence of job search around the lockdown in university recent graduates.

		<b>2T-2019</b>	<b>4T-2019</b>	<b>2T-2020</b>	<b>4T-2020</b>
All grads	Employed	0.100	0.119	0.065	0.128
	NEET	0.441	0.491	0.467	0.578
	Non-employed in education	0.237	0.224	0.234	0.302
	<i>All</i>	<i>0.171</i>	<i>0.193</i>	<i>0.175</i>	<i>0.229</i>
Bachelor	Employed	0.103	0.126	0.067	0.132
	NEET	0.412	0.483	0.432	0.545
	Non-employed in education	0.203	0.199	0.217	0.288
	<i>All</i>	<i>0.176</i>	<i>0.206</i>	<i>0.181</i>	<i>0.234</i>
Master	Employed	0.094	0.108	0.063	0.123
	NEET	0.532	0.512	0.547	0.640
	Non-employed in education	0.428	0.391	0.338	0.371
	<i>All</i>	<i>0.161</i>	<i>0.169</i>	<i>0.164</i>	<i>0.220</i>
All grads	Employed	0.100	0.119	0.065	0.128
	Experienced non-employed	0.421	0.457	0.452	0.552
	Unexperienced non-employed	0.259	0.263	0.228	0.279
	<i>All</i>	<i>0.171</i>	<i>0.193</i>	<i>0.175</i>	<i>0.229</i>
Bachelor	Employed	0.103	0.126	0.067	0.132
	Experienced non-employed	0.374	0.441	0.418	0.527
	Unexperienced non-employed	0.250	0.238	0.192	0.242
	<i>All</i>	<i>0.176</i>	<i>0.206</i>	<i>0.181</i>	<i>0.234</i>
Master	Employed	0.094	0.108	0.063	0.123
	Experienced non-employed	0.568	0.507	0.540	0.608
	Unexperienced non-employed	0.315	0.409	0.387	0.438
	<i>All</i>	<i>0.161</i>	<i>0.169</i>	<i>0.164</i>	<i>0.220</i>

Source: Spanish Labour Force Survey, quarterly files, 2T-2019 to 4T-2020.

The distinction of the incidence of job search across the diverse labour market statuses shows that, first of all, those in paid employment registered the most pronounced decrease in job search during the lock-down. After the lockdown the sharpest increases in job search took place amongst NEET and non-employed with employment experience. It is very likely that in both cases graduates had been postponing certain job search procedures that were not possible during the lockdown and wanted to take advantage of the end of the restrictions to resume work as soon as possible. The trend was more intense in bachelor's graduates than in master graduates.

The next step with therefore consist on looking at the evolution of the incidence of the diverse job search methods around the lockdown. As mentioned above, the LFS questionnaire does not consider university-supported job search methods. But most of the job search methods in the LFS questionnaires have some equivalence in EILU-2019's. Respondents report the use of the following non-mutually exclusive active job search methods (picking as many as they wish): (a) Public Employment Services (PES); (b) Preparing / doing a public exam; (c) attending interview(s) or other selection processes; (d) looking at mass media and the Internet; (e) either browsing or (and) answering to adds posted in the media or Internet; (f) using a private employment office; (g) contacted employers directly; (h) made enquiries to family members, friends, acquaintances, etc; (i) taking steps to become self-employed, such as looking for funding or loans, premises, etc. Table A-III displays the evolution of the incidence in each of these job search methods along the observation period.

Table A-III. Incidence of diverse job search methods around the lockdown amongst university recent graduates.

		2T-2019	4T-2019	2T-2020	4T-2020
All grads	PES	0.310	0.296	0.365	0.298
	Public exams	0.047	0.036	0.026	0.022
	Interview /selection process	0.276	0.245	0.153	0.232
	Mas media and Internet	0.823	0.843	0.796	0.876
	Adds (browsing &/or answering)	0.551	0.587	0.567	0.617
	Private employment office	0.324	0.343	0.338	0.378
	Contacted employers directly	0.717	0.660	0.597	0.690
	Consulted family/friends etc	0.673	0.688	0.594	0.667
	Self-employment	0.012	0.011	0.013	0.018
Bachelor	PES	0.314	0.293	0.362	0.294
	Public exams	0.053	0.035	0.030	0.024
	Interview /selection process	0.272	0.237	0.135	0.231
	Mas media and Internet	0.807	0.827	0.789	0.857
	Adds (browsing &/or answering)	0.535	0.556	0.556	0.594
	Private employment office	0.329	0.361	0.350	0.387
	Contacted employers directly	0.751	0.679	0.602	0.697
	Consulted family/friends etc	0.685	0.683	0.597	0.662
	Self-employment	0.006	0.005	0.008	0.015
Master	PES	0.302	0.301	0.370	0.305
	Public exams	0.035	0.039	0.020	0.019
	Interview /selection process	0.283	0.261	0.187	0.234
	Mas media and Internet	0.857	0.878	0.809	0.909
	Adds (browsing &/or answering)	0.586	0.657	0.587	0.657
	Private employment office	0.314	0.303	0.314	0.362
	Contacted employers directly	0.646	0.619	0.587	0.678
	Consulted family/friends etc	0.646	0.700	0.588	0.678
	Self-employment	0.026	0.025	0.023	0.022

Source: Spanish Labour Force Survey, quarterly files, 2T-2019 to 4T-2020.

Although the distributions are not comparable across data-sets, similarly to what happened in EILU-2019, informal job search methods like the mass media, browsing adds and contacting employers directly or by addressing enquiries to friends and family members are by far more common than formal methods, such as public employment offices and undertaking public exams. This holds true in both bachelor's and master graduates.

Regarding the evolution of the job search methods deployed around the lockdown, the most relevant trends can be described as follows: the lockdown caused an increase of the use of public employment services. This is very much related with the seek for special help during the lockdown for those who either lost their jobs or were in a temporary layoff. After the lockdown the trend reverted and the use of PES went back to pre-COVID levels. This would show that the use of PES is quite instrumental and the confidence on PES amongst graduates in Spain has plenty of room for improvement. The

lockdown meant the interruption of a relevant number of selection processes, so that the incidence of job search by taking part in interviews and selection processes decreased considerably. It actually halved amongst bachelor's degree graduates. Also contacting employers directly or indirectly (or via other people) became less common during the lockdown but resumed its previous levels afterwards. In both groups of graduates, direct contacts with employers became more relevant after the lockdown. Taking part in interviews and job search process also recovered its prior levels of incidence. This could be the result of previous enquiries (adds, Internet, etc) and contacts/interviews that had been postponed because of the health situation.

This brief and superficial look into job search intensity and patterns around the lockdown shows no relevant changes in the behaviour of graduates once upon the lifting of mobility restrictions at the end of 2020. We will end it by computing overeducation rates as the share of university graduates who work in mid-low qualified occupations, namely those below technicians (from administrative workers to unqualified, basic occupations). We do not use a different threshold for bachelor's and master's graduates, which explains why the incidence of overeducation is now lower amongst master graduates.

We observe no relevant changes in the incidence of overeducation, which are in average nearly 30 % in bachelor graduates and about 14% in master graduates (Table A-IV). The share of overeducation temporarily decreased during lockdown, possibly because of the great losses of jobs and layoffs affecting the hospitality and proximity trade sectors, where many of the overeducated graduates used to work. But the return to previous employment rates meant overeducation levels nearly resumed their pre-COVID levels.

Table A-IV. Overeducation rates around the lockdown amongst university recent graduates.

	<b>2T-2019</b>	<b>4T-2019</b>	<b>2T-2020</b>	<b>4T-2020</b>
All grads	0.237	0.242	0.205	0.230
Bachelor	0.298	0.295	0.266	0.293
Master	0.143	0.166	0.126	0.142

Source: Spanish Labour Force Survey, quarterly files, 2T-2019 to 4T-2020.

Since our analyses cannot be extended beyond the year 2020, we cannot know if more mid- and long-term trends could be found in both job search strategies and overeducation. It would be anyway worth analysing whether the experience of the lockdown may have changed in the midterm the proneness of university graduates to accept certain types of jobs that were very much vulnerable to the situation in 2020 (in terms of health risks) or, alternatively, to orient their job search efforts towards jobs with certain working conditions, involving telework and flexible working hours to increase their ability to reconcile work with personal and family life. Should graduates become more *picky* in this respect when accepting job offers, we could expect a mild but persistent decrease of overeducation rates in the future.

**TABLE A.1. Average values of independent variables in the multivariate analyses**

		Mismatch equations		Selection equation	
		Bachelor	Master	Bachelor	Master
Gender	Men	0.411	0.422	0.415	0.434
	Women	0.589	0.578	0.585	0.566
Age group - as at 31-Dec-2019	Under 30 years old	0.598	0.338	0.494	0.242
	30 to 34 years old	0.298	0.449	0.290	0.397
	35 years old and over	0.105	0.213	0.215	0.361
Interviewee and her parents foreign born	Both parents are Spanish born			0.929	0.893
	1+ parent born abroad, interviewee born in Spain			0.036	0.033
	Neither parents nor interviewee born in Spain			0.035	0.074
Parents' higher education attainment	Less than compulsory			0.163	0.169
	Compulsory			0.136	0.123
	Baccalaureate			0.114	0.111
	Intermediate vocational training			0.104	0.095
Whether this program was the first one	Higher education			0.483	0.501
	This was the first one			0.790	0.824
Reasons to study that particular programme	The graduate already held a previous one			0.210	0.176
	Training for one's future employment			0.768	0.788
Type of University	Training for personal purposes			0.144	0.136
	Other reasons			0.089	0.076
	Public <i>on-site</i>	0.855	0.787	0.809	0.697
Type of academic programme - field of study Selkec	Public distance learning	0.010	0.014	0.028	0.028
	Private <i>on-site</i>	0.125	0.140	0.136	0.168
	Private distance learning	0.010	0.058	0.027	0.106
	Arts and Humanities	0.079	0.095		
Grants	Sciences	0.062	0.098		
	Social Sciences and Law	0.479	0.583		
	Engineering and architecture	0.205	0.115		
	Health sciences	0.174	0.110		
	General study grant	0.410	0.292		
Geographical mobility during studies	Excellence award or grant	0.055	0.024		
	The degree only took place in one university	0.730	0.869		
	Partly in another Spanish university	0.061	0.073		
	Partly abroad	0.194	0.051		
Internships in companies, institutions or similar entities	Partly in another Spanish university and abroad	0.015	0.007		
	None	0.206	0.248		
	Internship as part of the curriculum	0.491	0.542		
	Internship outside the curriculum	0.138	0.108		
Employment status in the first job	Both types of internships	0.165	0.102		
	Trainee, training contract or Internships	0.232	0.200		
	Employee with temporary contract	0.433	0.472		
	Employee with permanent contract	0.008	0.005		
	Employer with employees	0.049	0.050		
	Employer without employees	0.012	0.007		
Length of working day	Family aid	0.232	0.200		
	Full time	0.676	0.669		
Time elapsed from graduation to the first job	Part time	0.324	0.331		
	Less than three months	0.319	0.354		
	3 to 6 months	0.157	0.181		
	6 months to one year	0.165	0.166		
When job search started	One year or more	0.360	0.299		
	Before graduating	0.340	0.493		
Observations	After graduating	0.660	0.507		
		22,525	6,588	31,651	11,483

Source: University Graduate Job Placement Survey 2019 (INE).