

The Transition from Vocational Education to Work: Evidence from Spain*

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Abstract

This paper analyzes, for the first time, the transition from vocational schooling to the first job in Spain using a micro-dataset on labor histories. Among the determinants of this transition, we investigate the role of workplace training, a mandatory module in Spain, although it can be validated with previous job experience. Applying duration techniques, and accounting for unobserved heterogeneity, we find that being a female, finishing education older or having high-educated parents reduce the exit rate to employment. We also obtain that workplace training is an important factor to reduce unemployment duration.

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1 Introduction

The school-to-work transition is one of the most important events in the life of young people, because, as pointed out by several studies (for instance, Heckman and Borjas (1980), Gregg (2001), or Stewart (2007)) bad results in early working life can have negative consequences on later outcomes. The access to the labor market is a difficult and uncertain process, as evidenced by the fact that youth unemployment rate is systematically higher than adult rate. The problems faced by youth to find an adequate job can be influenced by individual circumstances, the labor market framework and/or the type of education path (general or apprenticeship) followed by a person (OECD, 2000). Facilitating transition from school to work is a major task of education systems. In particular, most governments give attention to apprenticeship schemes to improve the employability of young people¹. According to Ryan (2011), the concept of apprenticeship includes all “programmes of learning that combine part-time formal education with training and experience at the workplace, and result in an externally recognised vocational qualification” (p. 4). Regarding this, apprenticeship can improve individual transition because workplace training provides several advantages: it develops work-related knowledge and skills; it makes learning more applied and relevant; and it allows young workers to acquire information and contacts in the labor market, helping the matching with employers (OECD, 2000; Ryan, 2011). Given these potential advantages, from a policy perspective, it is of central interest to analyze the role of apprenticeship paths in smoothing the school-to-work transition.

European countries differ in the institutional characteristics of apprenticeship. In countries with a system more labor market oriented, such as Germany or Switzerland, young people are more successful in the transition from school to work compared to countries where the apprenticeship path is not so connected to the labor market, such as Italy, UK or Spain (see Brunello et al. (2007) and Ryan (2011)). Since few years ago, there is a debate in Spain about the necessity of enhancing the link between school and labor market to provide young people with adequate skills and to reduce the high youth unemployment rate (46.4% in 2011 while the European Union average was 21.4%)².

The objective of our paper is to analyze the transition from school to work of Spanish people who have completed a vocational (apprenticeship) path. Among the determinants, we investigate to what extent workplace training affects this process. We conduct our analysis separately for *vocational high school* and *vocational college*, the two vocational levels available in the Spanish schooling system. Since vocational college entails more years of education than vocational high

¹For instance, the OECD is conducting several series of “Policy Reviews of Vocational Education and Training (VET)” (*Learning for Jobs*, and, recently, *Skills beyond School*) in different countries, with the objective of detecting strengths and challenges in their VET systems.

²A recent Royal Decree has regulated better the competences acquired with vocational degrees (RD1147, 2011). Likewise, the education reform proposed by the Spanish Government in September 2012, LOMCE (2012), introduces several measures to improve access to vocational education.

school, we explore whether this implies differences in the labor market entry.

Vocational education is school-based. This means that part of the time is spent in the classroom, where the technical knowledge is acquired, and part is spent in workplace training, in order to develop practical skills. In both vocational levels, workplace training is a mandatory module that takes place at the end of the program. However, the Spanish system recognizes the training module by accrediting previous work experience related to the program attended.

There is a broad literature studying the role of vocational education on the school-to-work transition. However, although many papers find that apprenticeship paths increase the employability of young people, there is no general consensus in favor of apprenticeship, as Wolter and Ryan (2011) explain in a recent review of the literature. Nevertheless, as our objective is to analyze the determinants of the transition from vocational education to work, we focus on commenting the international studies closest to our paper, which are those analyzing the effect of workplace training and individual characteristics on the labor market entry³. For Germany, Winkelmann (1996) finds that apprentices have faster labor market entry, specially, those who trained in large firms. Euwals and Winkelmann (2004) show that a high proportion of apprentices obtain the first job in their training firm, staying longer in it compared with the apprentices hired by another firm. Parey (2009) finds that individuals who completed an apprenticeship path including workplace training, have a higher probability of getting an employment at the beginning of their labor careers compared to individuals who followed a full-time vocational education. For Norway, Askilden and Nilsen (2005) find empirical support to the hypothesis that firms train workers based on long-term investment considerations. Finally, for Switzerland, Bertschy et al. (2009) show that students who performed better (measured through PISA scores) in vocational education are more likely to find an adequate job.

In the Spanish literature, few papers analyze the entrance of young people in the labor market. For instance, Alba (1996) studies the transition from unemployment to employment among young workers with any schooling level completed, showing that vocational education increases the probability of finding a job. Lassibille et al. (2001) analyze the school-to-work transition on the particular group of school leavers, finding that those with vocational education or university present the highest probability of having a job six and eighteen months after leaving school. Blazquez-Cuesta and Garcia-Perez (2007) estimate the effect of decentralization of education expenditure on transitions separately for people with university and non-university education, resulting that a high expenditure reduces the time spent in finding a job. Albert et al. (2008) look at the transitions to find the first significant and non-significant job, showing that a higher educational investment increases the probability of obtaining the former. However, to the best of our knowledge, no previ-

³For a cross-national comparison of the school-to-work transition, see Ryan (2001). In addition, see Ryan (1998) for a review of the merits of apprenticeship paths; Brunello et al. (2007) for a general review about the key facts and characteristics of education and training in Europe; and Ryan (2011) for a detailed analysis of the apprenticeship systems in UK, Italy, Germany and Switzerland.

ous study has analyzed the labor market entry of Spanish youth who have completed a vocational program, investigating the role of workplace training and comparing the transition across levels of vocational education. Our contribution is to fill this gap in the literature and to provide another country-specific study of the role of initial training on the school-to-work transition in order to enrich international evidence.

For our purpose, we use a unique micro-dataset on schooling and labor histories elaborated by the Spanish Statistics Institute in 2005 (Survey on Education and Labor Market Transitions). It contains representative samples of individuals who completed vocational high school or vocational college in the school year 2000/2001. For two main reasons, the design of this dataset is adequate to analyze the transition from vocational paths to work and to compare it between levels of vocational education. First, people are observed at the beginning of their labor careers, over a period of four years after completing the corresponding vocational studies. Second, all sampled individuals have finished vocational education in the same year (2001), facing the same economic conditions when they start searching for a job.

We study transitions by looking at the number of months to find a first job and a first “significant” job (a more stable job, lasting at least six consecutive months). Using the information in the database, we construct variables indicating whether an individual validated workplace training with previous accredited experience. In addition, our analysis also takes into account unobserved heterogeneity by following the standard nonparametric approach proposed by Heckman and Singer (1984).

Results show that the empirical hazards to the first job (significant or not) present a decreasing pattern, similar in the two groups of vocational education. Individuals who did not take the training have the slowest exit rate to both types of job. Findings from estimation show that being a female, finishing vocational education older, and having high-educated parents, increases unemployment duration. Taking the training module increases the exit to an employment in vocational high school and vocational college. Importantly, results hold after controlling for unobserved heterogeneity.

The rest of the paper is organized as follows. Next Section provides an overview of the Spanish education system. Section 3 describes the dataset we use. Section 4 presents the duration analysis and Section 5 shows the results. Finally, Section 6 concludes.

2 Spanish education system

In this Section we comment briefly the main characteristics of the Spanish education system (for a detailed description see, for instance, EURYDICE (2011)). Compulsory schooling covers ten years, up to the age of sixteen, and, then, young people can proceed to post-compulsory secondary education (high school) or they can enter the labor market (see Figure 1). At the high school level, an individual can choose between attending academic high school and vocational high school.

After completing upper secondary education, a person can decide to continue her studies attending university or vocational college (tertiary education). Access to vocational college is direct from the academic track while from the vocational track passing a specific training course is required. The schooling system allows to attend academic high school after completing the vocational track and to attend university after graduating from vocational college⁴.

In both high school and tertiary vocational programs, education received is school-based, with part of the time spent to acquire technical knowledge in the classroom and part spent in workplace training to develop work-related skills. Programs are offered in a wide range of fields, including, for example, agriculture, forestry and fishery, manufacturing, health, building, clerical support,..., and they are nationally recognized. The duration of the programs ranges between 1200 and 2000 hours of study (equivalent to around 1-2 years), where the training takes place at the end of the program through a mandatory three month module. Nevertheless, those individuals who accredit one year of full-time labor experience related to the program are exempt of taking the training module. Trainees do not receive any salary during the workplace training, with the exception of small payments to cover traveling expenses. It is important to highlight that vocational schools have agreements with local employers to take trainees; therefore, students do not have to search for training positions by themselves (see Field et al. (2012) for more details on the Spanish vocational system).

In Figure 2, we present the distribution of the educational levels of people aged 20-29 years old over the period 2001-2010. The distribution of schooling levels is quite stable across the last decade and vocational education is attained by around 20% of young people.

3 Data Description

The data we use come from the Survey on Education and Labor Market Transitions, produced by the Spanish Statistics Institute in 2005⁵. This survey provides information on education and labor activities of individuals who finished vocational high school or vocational college in the school year 2000/2001. Information is collected since 2001 until 2005 by using a retrospective interview. Individual decisions are observed along four years following graduation from vocational education. The dataset contains three types of information:

- **Personal characteristics.** Individuals report date of birth, gender, mother and father's education and province of residence.
- **Education.** Individuals indicate the age at which they finished the corresponding vocational schooling level, the program field completed and the type of school attended (private,

⁴The schooling system shown in Figure 1 was passed in the 1990 law (*Ley Orgánica General del Sistema Educativo*), which increased the age of compulsory education from 14 to 16 years old and reformed the upper secondary education.

⁵*Encuesta de Transición Educativo-Formativa e Inserción Laboral.*

semi-private or public)⁶. As we explain above, vocational education includes the workplace training module and the survey asks individuals whether this was their first labor experience. In addition, the dataset provides information on educational histories for the next years.

- **Work.** On a monthly basis, all individuals are asked about their employment or unemployment status. If they work, they report whether the job is part-time or full-time. Besides, a questionnaire on the job characteristics is asked to those individuals who are in some of the following situations: they work in a full-time job at the moment of the interview; or they worked in a full-time job in the same firm for at least six consecutive months in the past. Individuals have to fill in as many questionnaires as times they are in any of the previous situations. The questions about the job refer to the activity of the firm, occupation, net monthly wage on an interval basis, type of contract, hours worked, required degree, starting and finishing dates, and the means that the individual used to find the job.

Regarding the workplace training, as we explain in the previous Section, it is a compulsory module included in both levels of vocational education. However, it can be recognized with previous labor experience if an individual accredits that it is related to the content of the program attended. Otherwise, she must take the training module. Using the information from the dataset, we construct the following three mutually exclusive variables:

- *Training_1st*: equal to one if an individual took the training module, being this her first labor experience.
- *Training-previous*: equal to one if an individual took the training module having previous labor experience, although not related to the vocational program.
- *No training*: equal to one if an individual did not take the training module because she accredited previous labor experience related to the content of the program.

The initial sample sizes are 7,615 and 11,244 individuals with vocational high school and vocational college, respectively. As we are interested in comparing the school to work transitions of people who have attained vocational high school or vocational college as their maximum schooling level, we restrict our sample to individuals who do not attend further education in order to avoid misleading results⁷. We eliminate those individuals who continue in education in the school year 2001/2002 (1,297 and 3,977 for vocational high school and vocational college, respectively) and those who reenter the education system after that school year (around 10% of the remaining

⁶Semi-private schools (*colegios concertados*) are private institutions publicly-funded through agreements with educational authorities. Therefore, individuals can attend vocational education free of charge in both public and semi-private schools.

⁷This approach is also adopted in previous works (see, for instance, Hanushek et al. (2011)).

sample). Final sample sizes are 5,725 with vocational high school and 6,408 with vocational college⁸.

Table 1 contains a description of the two samples. The proportion of females is a bit higher among those who completed vocational college, while individuals who obtained a vocational high school diploma are younger. However, this is not surprising, given that vocational college belongs to the tertiary level while vocational high school is part of upper secondary education (see Figure 1). More than 70% of individuals completed a vocational program in a public school, whereas very few people attended a private one. These numbers are in line with the percentages of public and private schools offering vocational education in 2001 (70% and 30%, respectively)⁹. Both father and mother present a low schooling attainment, specially for the latter. It is also interesting to note that the percentage of people who report not knowing parents' education is not negligible, although it is lower among those who completed vocational college. Around 3% of individuals did not take the workplace training in vocational high school, while the percentage is higher in vocational college (12%). The proportion of individuals for whom the training was her initial labor experience is higher in vocational high school than in vocational college. However, the percentage of people who completed this module having previous experience is similar (around 50%) in both levels. Finally, 31% and 35% of people with vocational high school have taken a program in Manufacturing and Clerical and Transportation, respectively. Around 40% of people with vocational college have completed a program in Social Services. In both cases, few people obtained a degree in the field of Agriculture and Fishery.

One potential limitation of this survey for our analysis is that it does not contain information on grades. However, the age when a student finished education can be used as proxy for performance. According to the Spanish schooling system, an individual who completes education on time is between 17 and 18 years old in vocational high school and between 19 and 20 years old in vocational college (depending on whether they took a program of one or two years). In Table 2, around 90% (80%) individuals completed vocational high school (vocational college) with more than 18 (20) years old, indicating that they finished with delay. However, one possible concern is whether this delay is really consequence of bad performance or it is a result of a previous schooling career interruption. Unfortunately, we cannot distinguish perfectly between these situations because the database does not have enough information. Nonetheless, most individuals who attend vocational education usually have finished previous schooling levels with one or two years of delay (see Lopez-Mayan (2010) for more discussion on this). This evidence implies that individuals will be around

⁸In addition, we drop 21 individuals who reported having completed vocational high school with less than seventeen years old or vocational college with less than eighteen years old. Because these situations are impossible according to the schooling system explained previously, we consider them as measurement errors. We have checked that there are not relevant changes in the distribution of observed characteristics after dropping all those individuals. This analysis is available upon request.

⁹We compute these numbers using the statistics available at the website of the Spanish Ministry of Education (<http://www.educacion.gob.es/horizontales/estadisticas>).

19-20 and 21-22 years old if they complete vocational high school or vocational college on time, respectively. In line with this, Table 2 shows that about 50% of students finished vocational education with those ages, suggesting they performed well. Therefore, our analysis controls for the age as proxy performance.

4 Duration analysis

The dataset contains information on monthly employment over a period of four years following graduation from vocational high school or vocational college. Thus, it is adequate to analyze the determinants of the transition from these two schooling levels to the labor market. Furthermore, all individuals face the same economic conditions when they start searching for a job since they finished vocational education in 2001. This allows comparing properly the transition across vocational levels.

We consider as an indicator of the quality of transition the duration, measured by the number of months, until finding the first full-time job¹⁰. We distinguish the duration until finding two types of first jobs: the first job and the first “significant” job. The latter is a more stable job because it lasted at least six consecutive months. This definition is usually applied by the Spanish Statistic Institute in labor surveys.

4.1 A first look at the duration data

Before starting the specification of the econometric model, we explore in a descriptive way the duration patterns observed in the data.

Firstly, as the period of analysis corresponds with years of economic growth, the percentage of individuals who do not find a job (significant or not) between 2001 and 2005 is small (see Table 3), and, not surprisingly, it is a bit higher for the significant job. The percentages for women are higher, specially with respect to find a significant job. In addition, the percentage of individuals for whom the first significant job is also the first job is around 71% in both types of vocational education. This is a first evidence on the success of the school-to-work transition because most individuals found a job and, more important, for most of them the first job was significant.

In Table 4, we present the distribution of individuals by the year when they found each type of first job. The main aspect to highlight is that two years after completing education, most people had found a job (the percentages are 90% for first significant job and 95% for first job). Individuals with vocational college seem to be more successful, since they present higher percentages in the first year compared to individuals with vocational high school.

Next, we obtain that the average duration is around 3.8 and 6 months to find the first and the first significant job, respectively. In Table 5, we explore, for each vocational level, whether

¹⁰As we look at young people who do not continue in education, we focus on full-time instead of part-time jobs.

there are differences in the average duration after splitting the sample according to the training status and by the age when individuals finished education. Looking at the full sample, we find that individuals who took the training module having previous experience present the lowest average duration in finding both types of jobs. Moreover, students who did not take the training have the highest average duration to get the first significant job, both if they completed vocational high school or vocational college. We do not observe a clear decreasing or increasing age pattern in the average duration, suggesting that completing vocational education on time does not provide any advantage to find a job. Nevertheless, we have to be cautious on drawing this conclusion, as discussed in the preceding Section.

Finally, to get an idea of the patterns of unemployment duration, we obtain non-parametric Kaplan-Meier estimates of the survival function. These empirical hazards show the proportion of the number of exits from unemployment in each month with respect to the total population still in unemployment at the beginning of that month.

In Figure 3, we show the empirical hazards to the first job and to the first significant job. Regarding the latter, the patterns are quite similar between vocational high school and vocational college: the hazard rate falls very quickly from the first to the sixth month and, then, it falls slowly and monotonically. The same behavior is observed in the exit to the first job, although in this case, the hazard falls even more quickly during the first six months.

In addition, we obtain Kaplan-Meier estimates distinguishing by the training status of the individuals (Figures 4 and 5). In all cases, individuals who took the training having previous experience present the quickest fall in the hazard rate, while individuals who did not take the training have the slowest exit rate. These differences across training status are more pronounced in vocational high school.

All these Figures show a clear negative duration dependence in both vocational levels, with differences by the training status. However, these patterns were obtained without controlling for other variables. Thus, the next step in the analysis is to estimate an econometric model that controls for observed and unobserved characteristics to get the true state dependence and the effect of the workplace training on duration.

4.2 Duration model

We analyze the determinants of the hazard rate from unemployment to the first (significant or not) job by estimating a duration model. We use a discrete-time model since, in our data, exit to employment occurs in continuous time although we only observe time at one-month intervals¹¹. Let T be a discrete duration random variable indicating number of months and taking on values

¹¹See Lancaster (1990) and Jenkins (1995, 2005) for the basic features of such models.

$\{1, 2, 3, \dots\}$ with probability mass function:

$$p(t) = \Pr(T = t), \quad t = 1, 2, \dots$$

and cumulative distribution function:

$$F(t) = \Pr(T \leq t) = p(1) + p(2) + \dots + p(t)$$

The hazard function is

$$\begin{aligned} h(t) &= \Pr(T = t \mid T \geq t) = \frac{\Pr(T = t)}{\Pr(T \geq t)} = \frac{\Pr(T = t)}{1 - \Pr(T \leq t - 1)} \\ &= \frac{p(t)}{1 - p(1) - \dots - p(t - 1)} = \frac{F(t) - F(t - 1)}{1 - F(t - 1)} \quad \text{for } t > 1 \end{aligned}$$

and $h(1) = p(1) = F(1)$. The hazard gives probabilities of exit to employment defined over the surviving population at each time. The hazard function conditional on covariates is given by $h(t, X) = \Pr(T = t \mid T \geq t, X)$ and we consider a complementary log-log (cloglog) specification:

$$h(t, X) = 1 - \exp[-\exp(\beta'X + c(t))]$$

The cloglog is a proportional hazard model, where $c(t)$ is the baseline hazard function which summarizes the pattern of duration dependence and it is not affected by individual covariates X . We assume that duration dependence is characterized by $c(t) = r \log t$. Thus, the hazard function is given by

$$h(t, X) = 1 - \exp(-\lambda t^r), \quad \lambda = \exp(\beta'X)$$

As Jenkins (2005) points out, this is the discrete-time analogue to the continuous-time Weibull model. The parameter r determines whether the hazard is increasing ($r > 0$), decreasing ($r < 0$), or constant over time ($r = 0$), similarly to the shape parameter in a Weibull model¹². The cloglog model is adequate to our data because of the monotonic and decreasing hazard rates, as shown in Figure 3.

Regarding the explanatory variables, we consider several individual and schooling characteristics. We control for personal and family attributes, such as gender, age when a person finished education to capture performance in vocational education, as we have discussed before, schooling attainment of both parents, and residence region dummies. We include the three dummy variables reflecting the training status of each individual in order to estimate to what extent the training affects unemployment duration. We also consider the type of school (private, public or semi-private) where an individual attended vocational education, and the type of program field she completed.

One of the main issues concerning the estimation of hazard regressions is unobserved heterogeneity. Ignoring unobserved individual characteristics may bias the estimates of the effect of

¹²In the Weibull specification, the hazard function is $h(t, X) = p\lambda t^{p-1}$, where $\lambda = \exp(\beta'X)$ and p is the *shape parameter*.

observed explanatory variables in the hazard function and introduce spurious negative duration dependence. For instance, it is not random who has job experience related to the program attended that can be used to validate workplace training. We deal with this issue in the following way. We control for a broad set of explanatory variables, including gender, age and parents' education, which can affect previous labor decisions. Indeed, Table A.1 shows that individuals taking training are proportionally younger and women, while there is no clear pattern for parents' education. In addition, we account for unobserved heterogeneity following the approach proposed by Heckman and Singer (1984). We assume that the unobserved heterogeneity follows a "mass point" distribution that takes on two different values (μ_1 and μ_2) with probabilities p_1 and p_2 respectively¹³. Broadly speaking, this means that in the population there are two types of individuals, which differ in unobserved characteristics such as ability or motivation to find a job or to progress in education. Failing in controlling these individual attributes will bias the estimates of the observed variables. The estimates are obtained by maximizing a finite-mixture likelihood function where μ_1 , μ_2 , p_1 and p_2 are additional parameters.

5 Results

In this Section, we report the estimates of the duration model to find the first job and the first significant job for vocational high school and vocational college separately. We start by estimating three specification models (M1, M2 and M3), which consider different sets of explanatory variables. M1 includes female, age when an individual finished education, type of school and the training variables. Specification M2 adds parents' education and M3 also controls for the type of program field¹⁴. Then, we report the estimates from the specification with all the covariates after accounting for unobserved heterogeneity.

All Tables report the baseline hazard estimates associated with a change in the value of one of the covariates. These hazard ratios have the virtue of being easy to interpret: those greater than one indicate that a one unit increase in the covariate rises the baseline hazard (lower expected duration), while those less than one indicate a decrease in the hazard to find a job (greater expected duration).

Tables 6 and 7 contain the hazard ratio estimates from the duration model to find the first job and the first significant job, respectively, for the three sets of explanatory variables, without accounting for unobserved heterogeneity.

First of all, for each path of vocational education, we find that the estimated effects of the covariates common to the three specifications are robust to the inclusion of additional variables. Therefore, from now on, we comment the results corresponding to the third specification (M3).

¹³We have estimated assuming also a three mass point distribution, but the likelihood hardly improves.

¹⁴All the specifications include region dummies. For brevity reasons, we do not show the results in the Tables although they are available upon request.

In both types of jobs, we obtain that women are around 20% more likely than men to experience greater duration in unemployment and this effect is similar across types of vocational studies. The age when an individual finished education reduces the exit to employment in vocational high school by about 2-3%. On the contrary, it increases the hazard by 3% in vocational college, although only for the first job.

From a policy perspective, the most relevant covariates are the type of school and training dummies. Attending a private school reduces the probability of exiting to both types of jobs by around 10-13% with respect to having attended a semi-private school, although the effects are only significant for vocational college. Individuals who have completed vocational high school in a public institution are 10% more likely of finding a job faster than those who attended a semi-private school. This positive effect of public institutions is not observed in vocational college. In order to interpret these results, it is necessary to note that the type of school may account for both differences in the institution quality and in family income. For instance, the negative effect of private schools can capture that these centers are attended by students from high income households who do not need to find a job so quickly as students from low income households (probably attending public schools). Another possibility is that private schools are of lower quality than public schools to reduce the exit to employment. We guess that is more likely that the type of school captures quality because these estimates were obtained after controlling for parents' education, which is usually considered a proxy for household income. Individuals whose parents have upper secondary or tertiary education present lower hazard ratios than those whose parents' schooling attainment is compulsory education or less (low income households). This result is in line with Dustmann (2004).

We obtain that vocational high school students who took the training module are more likely to exit to employment than individuals who validated it. The effect is significant and big, specially for the individuals who took the workplace training having previous labor experience (in this case, the hazard rate to employment increases by 65% and 40% to the first job and to the first significant job, respectively). In vocational college, workplace training also reduces the duration to the first significant job by 21% and 12% with and without previous experience, respectively. However, the training increases duration to the first job, although only for individuals who did not have previous labor experience.

Finally, the type of program field also plays a role in finding a job. Completing a program in Manufacturing or Building has important effects in reducing the expected duration with respect to obtain a program in Agriculture and Fishery. The impact is around 55-57% for Building and 22-25% for Manufacturing. Clerical and Transportation also decreases duration although the effect is only significant in vocational high school. We do not find evidence that completing a program in Social Services affects the duration. The evidence is similar with respect to finding the first significant job, although with the difference that Building is the only field with a significant effect

in vocational college.

Using the estimates from Table 7, we predict the survival function to the first significant job separately for each type of vocational education (Figure 6) and distinguishing also the training status (Figure 7). Figures show a good fit of the corresponding empirical hazards (see left panel of Figure 3, and Figure 5, respectively). There is only some noise in the predicted hazards when the number of months to find a job is high due to the few observations with this huge duration (see Table 4).

5.1 Unobserved heterogeneity

In Tables 8 and 9, we report the results from the specification with all the covariates, once we control for unobserved heterogeneity. The proportion of type two individuals in the population is around 60% and 40% in the estimates corresponding to the first job and to the first significant job, respectively. This type of individuals are more likely to find a job faster than individuals of type one, although the effect is only significant for the first job (see last rows of Tables 8 and 9). This means that individuals of type two have unobserved characteristics that reduce their unemployment duration, such as, for example, innate ability or motivation. In addition, for the first significant job, this heterogeneity may also include the effect of having more networks from previous labor experience in the first job. This is the case for 29% of individuals who had a full-time job that lasted less than six months (see Section 4.1).

Including unobserved heterogeneity also allows estimating the true effect of $\log t$ (*duration dependence*). In fact, the hazard ratio estimate of this variable is higher once unobserved heterogeneity is accounted for, increasing from around 0.45 to 0.80 for the first job, and from 0.45 to 0.76 for the first significant job. This indicates that lack of control for unobserved heterogeneity downward bias the negative duration dependence.

Regarding the rest of covariates, the estimates of the female dummy are similar to those obtained without accounting for unobserved heterogeneity. The age when an individual finished education also reduces the exit to employment although only in vocational high school (in vocational college the estimates are not significant). The positive effect of attending vocational high school in a public institution is robust to control for unobserved heterogeneity, while the negative effect of attending a private school disappears. The estimates of parents' education are similar in magnitude although there is a loss of significance in some cases.

With respect to the training variables, accounting for unobserved heterogeneity reinforces the magnitude of the effects we have found previously. The negative effect of the training as first labor experience found in Table 6 for vocational college disappears. Instead, taking the training having previous experience reduces unemployment duration. Therefore, our analysis shows strong evidence in favor of the workplace training as a way of improving the transition from both types of vocational education to work. This initial training helps in finding a first full-time job and also a

first significant (more stable) job. From this perspective, allowing validating the training module with previous experience does not seem an appropriate educational policy.

Finally, only Building remains significant after controlling for unobserved heterogeneity. This positive and strong effect can be explained by the expansion of the construction sector in Spain between 2000 and 2007 due to the housing bubble.

5.2 Job characteristics

We find that workplace training clearly increases the probability of exiting from unemployment. Although the objective of this paper is to analyze the duration to enter the labor market, given our results, it is also important to go one step further and to explore whether there are differences in other job characteristics such as wage, type of contract, occupation, etc. We do that using the information on the first significant job provided by the survey. Unfortunately, we cannot do the same for the first job because the dataset does not report this information for full-time jobs that lasted less than six months.

In Table 10, separately for vocational high school and vocational college, we present the distribution of wage, type of contract, occupation, activity sector and required degree in the job, both for the full sample and after conditioning on the training status. This Table also reports the average number of months working in the first significant job. We calculate the average employment duration distinguishing whether the first significant job had expired (*past job*) or not (*current job*) at the moment of the interview. Training increases the average duration in the first significant job in the two vocational levels because, in general, individuals who did not take this module present the lowest duration, both in past and current jobs. More details about this employment duration can be found in Table 11, where we report the percentage of individuals with a significant job that lasted, respectively, one year or less, between one and two years, or more than two years. For around 80-90% of workers, the duration of the current job is greater than two years, while in the case of past jobs, this percentage is only about 21-25%. In addition, the highest percentages of jobs that lasted one year or less are found among individuals who did not take the training, specially in vocational high school. For jobs with a duration above two years, the highest percentages are for individuals who took the training having previous experience.

Employees who validated workplace training have a higher percentage of permanent contracts and a lower share of fixed-term ones, although the differences are small. Taking the training is related to lower earnings, although we do not find a very clear pattern. However, caution is required given the high percentage of individuals who reported not knowing their wage or contract.

Regarding the occupation, a clear difference emerges: individuals with vocational high school are relatively more employed in blue-collar jobs (75%) than individuals with vocational college (44%). This difference can be attributed to the different range of programs offered in each vocational level. By training status, we do not find differences in vocational high school, while

in vocational college, taking the training implies to be relatively more employed in white-collar occupations (around 56-61%).

The survey also provides information on the schooling degree that is required for the job (compulsory, academic high school, vocational high school, vocational college or university). First of all, note that around 30% and 38% of the individuals with vocational high school and vocational college, respectively, obtained a job that did not require any degree. Secondly, around half of individuals found a job whose requirements matched the vocational degree they attained. However, by training status, individuals who did not take the training are relatively more overeducated, specially in vocational college, where around 41% of them found a job requiring a vocational college degree, while this proportion is 53% among students who did not validate the training module. Moreover, 13% of individuals with vocational college and not taking the training had an employment that only required a vocational high school degree, compared to a proportion of 9% among those completing workplace training.

Finally, people who validated the training were relatively more employed in Manufacturing-Extraction, Construction and Hotel industry activities, while individuals for whom the training was their first labor experience worked relatively more in Commerce, Services, and Education-Health sectors.

6 Conclusions

This paper studies, for the first time, the labor market entry of people who have completed one of the two existing vocational levels in Spain (vocational high school and vocational college, in upper secondary and tertiary education, respectively). As vocational college entails more years of schooling, we make a separate analysis of the effect of individual, family and school characteristics on the duration, measured by number of months, to find the first job and the first significant job (a job lasting at least six months). We analyze whether the workplace training module included at the end of all vocational programs affects the school-to-work transition. This module is mandatory, although the Spanish system recognizes it by accrediting previous work experience related to the content of the program.

Accounting for unobserved heterogeneity, we find that the training module has an important role on increasing the hazard rate to the two types of jobs, specially when training is combined with previous labor experience. In addition, being a female, finishing vocational education older or having high-educated parents reduce the exit to employment. Attending vocational high school in a public institution reduces the unemployment duration, while attending a private school does not have significant effects. We do not find relevant differences in the estimates across vocational levels.

We also explore whether there are differences in other job characteristics. Evidence shows that

validating workplace training implies significant jobs with lower average duration. In vocational college, individuals who did not take the training are relatively more employed in blue-collar occupations and they are more overeducated.

From a policy perspective, in many countries, and Spain is not an exception, the school-to-work transition is a concern. Based on the evidence from labor-oriented education systems (such as the German scheme), since some years ago, Spanish government is trying to improve the link between school and labor market. In this context, our research findings suggest that allowing recognizing the training module with previous experience in any vocational level is not an appropriate educational policy, since we obtain that initial training helps to enter the labor market. This policy recommendation is in line with the OECD report by Field et al. (2012), which highlights that reinforcing the workplace training is still a challenge for the Spanish vocational system.

Since our analysis studies the beginning of labor careers, a related question is whether the advantages of workplace training persist later in life. Ryan (2011) has noted that apprenticeship paths may produce limited gains on later labor careers because vocational skills become obsolete faster. Regarding this, Hanushek et al. (2011) find that individuals with vocational education experience worse employment outcomes as they become older relative to individuals with general education. In addition, other possible problems of vocational schooling are that trainees can be considered “cheap labor”, reducing the learning content of the workplace experience; or that difficulties to merge theory and practice into a coherent whole may appear (Ryan, 2011). However, clarifying those effects requires, on the one hand, to have data on later labor careers, and, on the other hand, to have more information about the tasks developed during the workplace training. At this moment, owing to the lack of appropriate data in Spain, these remain as important questions to be analyzed in future research.

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Figures

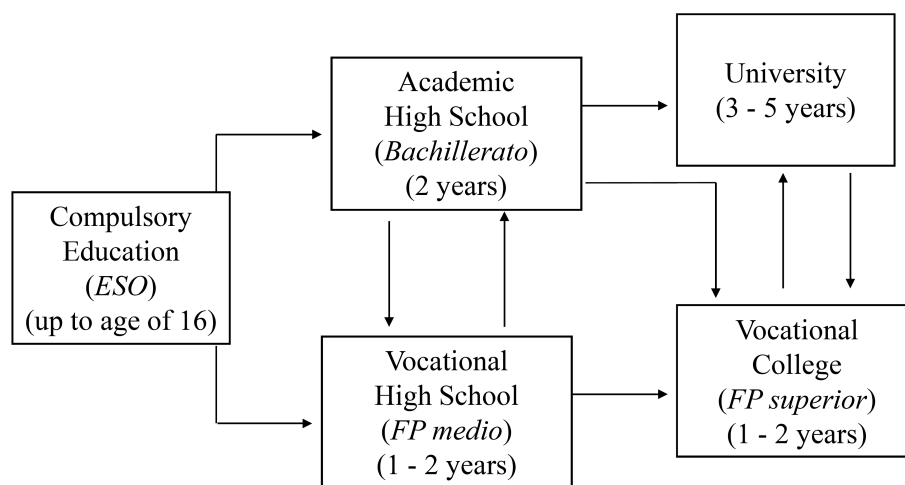


Figure 1: Schooling levels in post-compulsory education in Spain

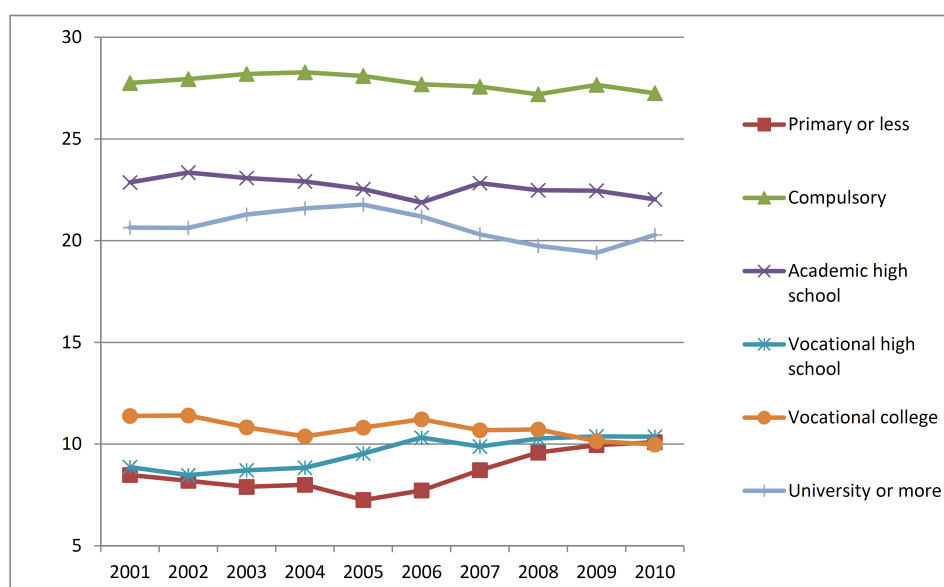


Figure 2: Schooling attainment of people aged 20-29 years old (% , Spanish Labor Force Survey)

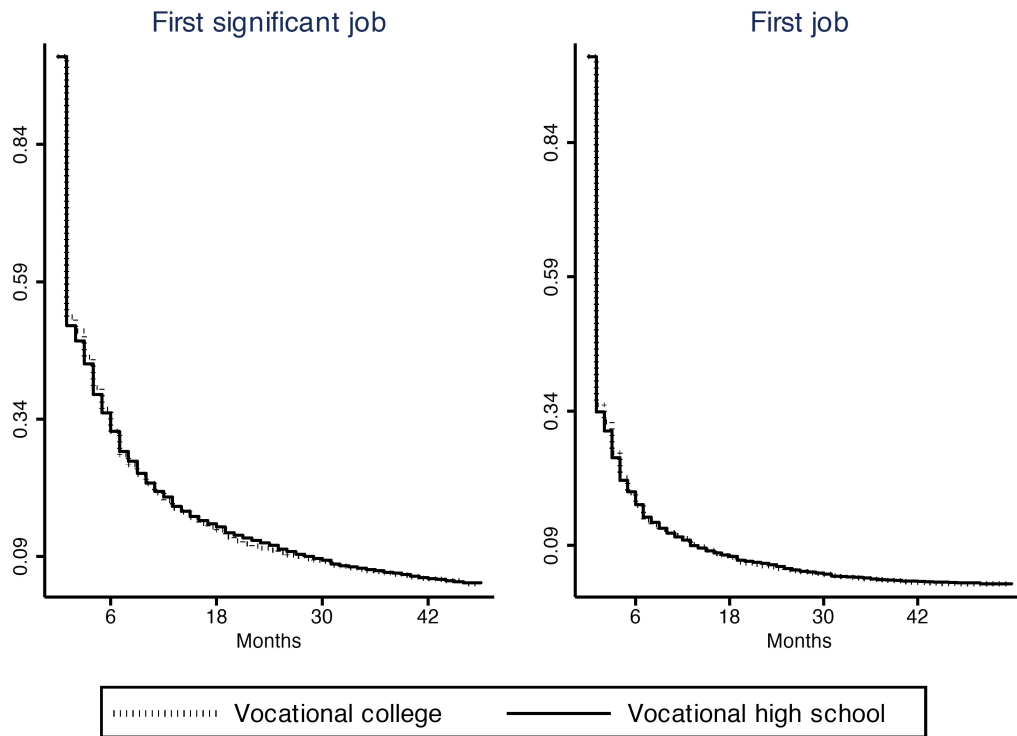


Figure 3: Kaplan-Meier empirical hazard to the first significant job and to the first job

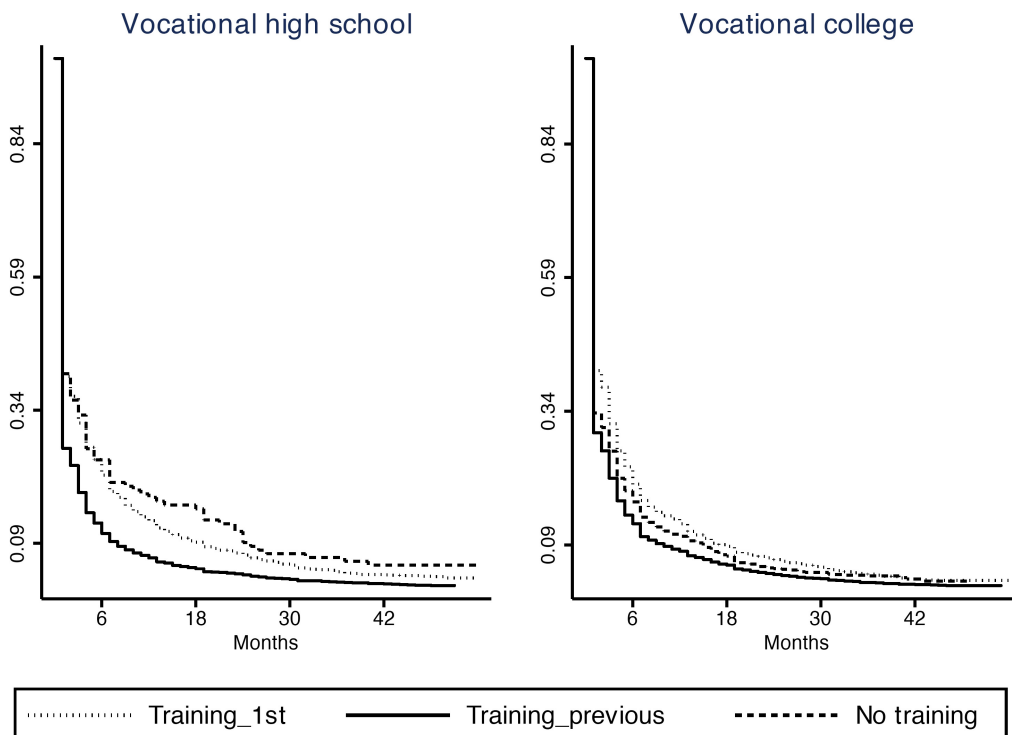


Figure 4: Kaplan-Meier empirical hazard to the first job, by training status. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

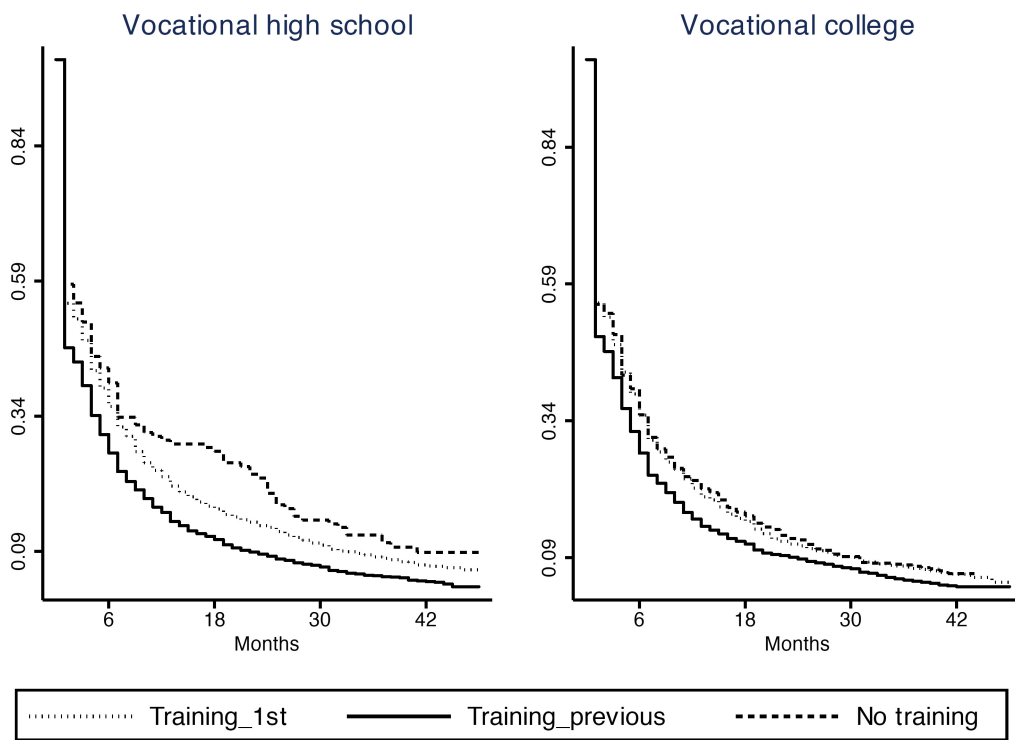


Figure 5: Kaplan-Meier empirical hazard to the first significant job, by training status. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

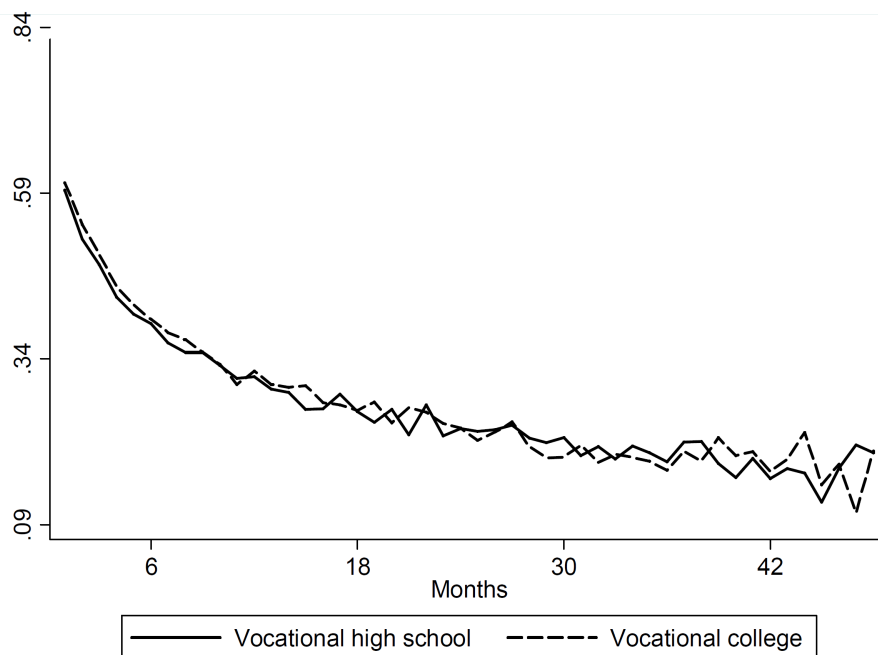


Figure 6: Predicted survival function to the first significant job

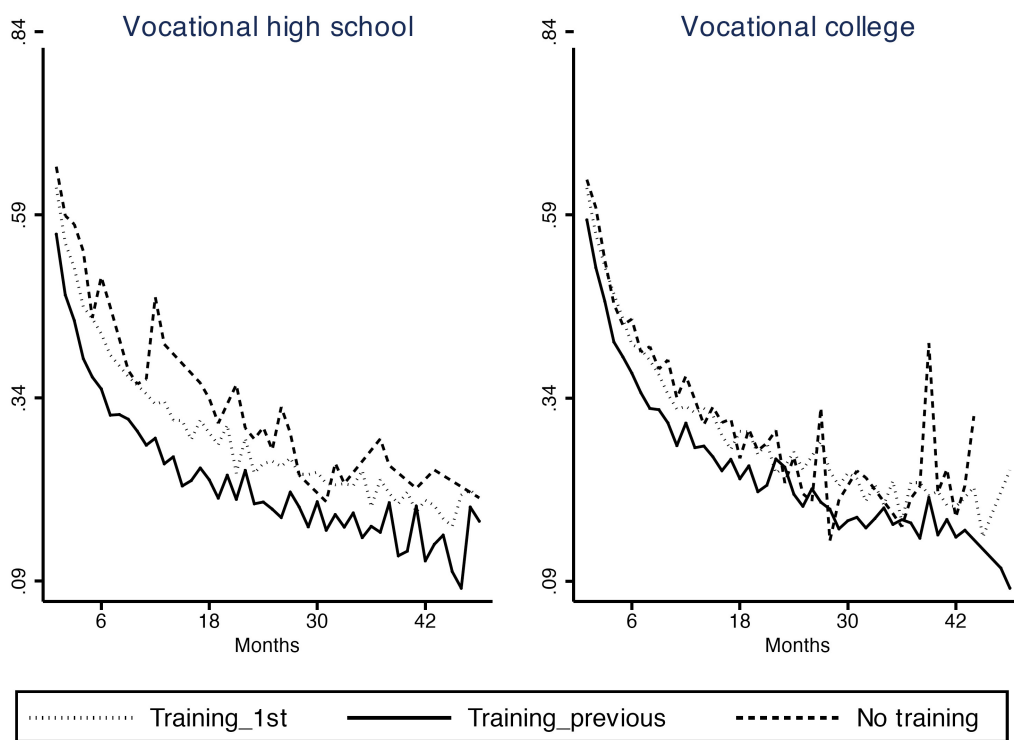


Figure 7: Predicted survival function to the first significant job, by training status. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Tables

Table 1: **Sample description**

	Vocational High School		Vocational College	
	Mean	Std. dev.	Mean	Std. dev.
Female	0.45	0.50	0.50	0.50
Age when finished education	20.13	1.40	21.53	1.18
Type of school:				
Public	0.73	0.44	0.75	0.43
Semi-private	0.25	0.43	0.19	0.39
Private	0.02	0.13	0.06	0.23
Father's education:				
Compulsory or less	0.65	0.48	0.65	0.48
High school	0.11	0.32	0.14	0.35
Tertiary	0.07	0.26	0.11	0.31
Don't know	0.16	0.38	0.10	0.30
Mother's education:				
Compulsory or less	0.72	0.45	0.73	0.44
High school	0.10	0.30	0.13	0.34
Tertiary	0.04	0.19	0.06	0.23
Don't know	0.14	0.34	0.08	0.28
Workplace training:				
Training_1 st	0.49	0.50	0.41	0.49
Training_previous	0.48	0.50	0.47	0.50
No training	0.03	0.16	0.12	0.32
Program field:				
Agriculture-Fishery	0.03	0.16	0.01	0.12
Manufacturing	0.31	0.46	0.23	0.42
Building	0.05	0.22	0.06	0.24
Clerical and Transportation	0.35	0.48	0.28	0.45
Social services	0.27	0.44	0.41	0.49
Region:				
Northwest	0.08	0.27	0.10	0.29
Northeast	0.12	0.32	0.14	0.35
East	0.17	0.37	0.15	0.36
Centre	0.47	0.50	0.47	0.50
South	0.16	0.37	0.15	0.35
N	5725		6408	

Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience. Northwest: Galicia, Asturias, Cantabria. Northeast: Basque Country, La Rioja, Navarra, Aragon. East: Catalonia, Valencia, Balear Islands. Centre: Madrid, Extremadura, Castilla-Leon, Castilla-La Mancha. South: Andalusia, Canary Islands, Ceuta-Melilla, Murcia.

Table 2: **Percentage of students by age when finished education**

	Vocational High School	Vocational College
17	0.94	-
18	10.41	0.16
19	24.21	4.00
20	27.41	16.60
21	19.32	26.86
22	11.65	28.23
23	5.80	23.28
24	0.17	0.47
25	0.09	0.41
N	5725	6408

Table 3: **Percentage of students who do not find a job**

	Vocational High School		Vocational College	
	Women	Men	Women	Men
First job	3.02	1.31	2.57	1.16
N	78	41	83	37
First significant job	7.31	3.37	6.32	3.43
N	189	106	204	109

Table 4: **Percentage of students by year when finding the job**

	Vocational High School		Vocational College	
	First job	First significant job	First job	First significant job
2001	68.44	57.72	80.47	67.12
2002	25.81	31.16	14.11	22.81
2003	3.69	7.00	3.50	6.46
2004	1.84	4.11	1.61	3.56
2005	0.21	0.02	0.32	0.05
Total	100	100	100	100
N	5606	5430	6288	6095

Table 5: **Average number of months to find the job**

A. First job						
Vocational High School				Vocational College		
	Training_1 st	Training_previous	No training	Training_1 st	Training_previous	No training
<i>Full sample*:</i>						
	4.54 (7.28)	2.93 (5.47)	4.99 (8.09)	4.56 (7.37)	3.23 (5.80)	3.77 (6.52)
<i>By age when finished education:</i>						
17	6.23	4.50	12.50	-	-	-
18	4.55	3.19	8.77	1.00	1.80	9.67
19	3.83	2.86	4.41	4.57	3.57	5.32
20	4.73	2.66	3.65	4.36	3.70	3.64
21	4.65	3.06	4.00	4.51	3.09	3.46
22	5.41	2.95	7.40	4.52	3.10	3.87
23	4.79	3.24	4.30	5.08	3.32	3.53
24	9.00	2.13	-	1.60	2.24	3.00
25	15.50	4.67	-	1.50	1.43	1.00
N	2741	2730	135	2586	2991	711
B. First significant job						
Vocational High School				Vocational College		
	Training_1 st	Training_previous	No training	Training_1 st	Training_previous	No training
<i>Full sample*:</i>						
	6.54 (8.77)	5.37 (7.83)	8.04 (10.51)	6.42 (8.48)	5.53 (7.95)	6.54 (8.56)
<i>By age when finished education:</i>						
17	7.74	8.72	1.00	-	-	-
18	6.09	5.04	9.23	1.00	4.00	11.50
19	5.72	5.08	8.90	6.11	5.70	7.84
20	7.06	4.90	7.78	6.06	5.69	5.86
21	6.64	5.61	5.12	6.59	5.54	7.01
22	7.05	5.82	13.71	6.28	5.58	7.26
23	8.12	6.46	4.89	6.97	5.46	4.93
24	9.00	3.00	-	4.10	5.06	3.00
25	15.50	4.67	-	3.25	2.08	9.25
N	2633	2668	129	2494	2919	682

*Standard deviation in parenthesis. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 6: Hazard ratio estimates (First job)

	Vocational High School			Vocational College		
	M1	M2	M3	M1	M2	M3
Female	0.78*** (0.02)	0.77*** (0.02)	0.80*** (0.02)	0.79*** (0.02)	0.77*** (0.02)	0.80*** (0.02)
Age when finished education	0.97*** (0.01)	0.97*** (0.01)	0.97*** (0.01)	1.03*** (0.01)	1.03*** (0.01)	1.03*** (0.01)
Duration dependence (log t)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.44*** (0.01)	0.44*** (0.01)	0.45*** (0.01)
<i>Type of school (ref.: Semi-private):</i>						
Private school	0.86 (0.09)	0.87 (0.09)	0.91 (0.10)	0.79*** (0.05)	0.82*** (0.05)	0.87** (0.05)
Public school	1.11*** (0.03)	1.10*** (0.03)	1.11*** (0.03)	0.95 (0.03)	0.95 (0.03)	0.94* (0.03)
<i>Workplace training (ref.: No training):</i>						
Training_1 st	1.31*** (0.12)	1.28*** (0.11)	1.28*** (0.11)	0.89*** (0.04)	0.89*** (0.04)	0.91** (0.04)
Training_previous	1.69*** (0.15)	1.65*** (0.15)	1.65*** (0.15)	1.02 (0.04)	1.02 (0.04)	1.05 (0.04)
<i>Parents' education (ref.: Compulsory or less):</i>						
Upper secondary (father)		0.97 (0.04)	0.97 (0.04)		0.97 (0.04)	0.98 (0.04)
Tertiary (father)		0.83*** (0.05)	0.84*** (0.05)		0.85*** (0.04)	0.85*** (0.04)
“Don’t know” (father)		0.82*** (0.05)	0.82*** (0.05)		1.01 (0.07)	1.00 (0.07)
Upper secondary (mother)		0.87*** (0.04)	0.87*** (0.04)		1.05 (0.04)	1.05 (0.04)
Tertiary (mother)		0.89 (0.07)	0.89 (0.07)		0.90* (0.05)	0.91* (0.05)
“Don’t know” (mother)		1.13* (0.08)	1.13* (0.08)		0.92 (0.07)	0.92 (0.07)
<i>Program field (ref.: Agriculture-Fishery):</i>						
Manufacturing			1.22** (0.11)			1.25** (0.13)
Building			1.55*** (0.16)			1.57*** (0.18)
Clerical and Transportation			1.25** (0.11)			1.17 (0.12)
Social services			1.10 (0.10)			1.05 (0.11)
Constant	1.09 (0.24)	1.08 (0.24)	0.85 (0.20)	0.47*** (0.11)	0.44*** (0.10)	0.38*** (0.10)
Regions	Yes	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-11626.8	-11604.1	-11557.0	-13326.9	-13311.7	-13280.8
Observations	27258	27258	27258	30591	30591	30591
N	5606	5606	5606	6288	6288	6288

Dependent variable: number of months to find the first job after completing vocational education. Significance levels: *** 1%; ** 5%; * 10%. Standard errors in parenthesis. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 7: Hazard ratio estimates (First significant job)

	Vocational High School			Vocational College		
	M1	M2	M3	M1	M2	M3
Female	0.77*** (0.02)	0.76*** (0.02)	0.79*** (0.03)	0.79*** (0.02)	0.78*** (0.02)	0.81*** (0.02)
Age when finished education	0.97*** (0.01)	0.97** (0.01)	0.98** (0.01)	1.01 (0.01)	1.01 (0.01)	1.01 (0.01)
Duration dependence (log t)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.44*** (0.01)	0.44*** (0.01)	0.45*** (0.01)
<i>Type of school (ref.: Semi-private):</i>						
Private school	0.88 (0.10)	0.89 (0.10)	0.92 (0.11)	0.80*** (0.05)	0.83*** (0.05)	0.90* (0.06)
Public school	1.10*** (0.03)	1.09*** (0.03)	1.10*** (0.04)	1.00 (0.03)	0.99 (0.03)	0.99 (0.03)
<i>Workplace training (ref.: No training):</i>						
Training_1 st	1.19* (0.11)	1.17* (0.11)	1.17* (0.11)	1.09* (0.05)	1.09* (0.05)	1.12*** (0.05)
Training_previous	1.41*** (0.13)	1.40*** (0.13)	1.40*** (0.13)	1.16*** (0.05)	1.17*** (0.05)	1.21*** (0.05)
<i>Parents' education (ref.: Compulsory or less):</i>						
Upper secondary (father)		0.94 (0.04)	0.95 (0.04)		0.99 (0.04)	0.99 (0.04)
Tertiary (father)		0.94 (0.06)	0.94 (0.06)		0.88*** (0.04)	0.88*** (0.04)
“Don’t know” (father)		0.85** (0.06)	0.85** (0.06)		1.01 (0.07)	1.01 (0.07)
Upper secondary (mother)		0.98 (0.05)	0.99 (0.05)		1.01 (0.04)	1.01 (0.04)
Tertiary (mother)		0.84** (0.07)	0.85** (0.07)		0.89* (0.06)	0.90* (0.06)
“Don’t know” (mother)		1.09 (0.08)	1.09 (0.08)		0.93 (0.07)	0.94 (0.07)
<i>Program field (ref.: Agriculture-Fishery):</i>						
Manufacturing			1.22** (0.11)			1.15 (0.13)
Building			1.51*** (0.16)			1.44*** (0.17)
Clerical and Transportation			1.24** (0.11)			1.09 (0.12)
Social services			1.13 (0.10)			0.96 (0.11)
Constant	0.64** (0.15)	0.65* (0.15)	0.51*** (0.13)	0.33*** (0.08)	0.32*** (0.08)	0.29*** (0.08)
Regions	Yes	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-13923.6	-13914.6	-13902.8	-15819.1	-15808.9	-15778.6
Observations	44732	44732	44732	49923	49923	49923
N	5430	5430	5430	6095	6095	6095

Dependent variable: number of months to find the first significant job after completing vocational education. Significance levels: *** 1%; ** 5%; * 10%. Standard errors in parenthesis. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 8: **Hazard ratio estimates with unobserved heterogeneity (First job)**

	Vocational High School	Vocational College
Female	0.74*** (0.04)	0.80*** (0.04)
Age when finished education	0.94*** (0.01)	0.99 (0.02)
Duration dependence (log t)	0.78*** (0.02)	0.80*** (0.02)
<u>Type of school (ref.: Semi-private):</u>		
Private school	0.84 (0.13)	0.90 (0.08)
Public school	1.13** (0.06)	1.00 (0.05)
<u>Workplace training (ref.: No training):</u>		
Training_1 st	1.37* (0.22)	1.01 (0.07)
Training_previous	2.07*** (0.34)	1.20*** (0.08)
<u>Parents' education (ref.: Compulsory or less):</u>		
Upper secondary (father)	1.00 (0.07)	0.91 (0.07)
Tertiary (father)	0.95 (0.09)	0.79*** (0.06)
“Don’t know” (father)	0.75*** (0.07)	0.88 (0.10)
Upper secondary (mother)	0.81*** (0.06)	1.13 (0.09)
Tertiary (mother)	0.87 (0.11)	0.93 (0.08)
“Don’t know” (mother)	1.25** (0.12)	1.00 (0.12)
<u>Program field (ref.: Agriculture-Fishery):</u>		
Manufacturing	0.99 (0.13)	1.09 (0.19)
Building	1.44** (0.24)	1.82*** (0.35)
Clerical and Transportation	1.03 (0.14)	1.00 (0.17)
Social services	0.94 (0.13)	0.90 (0.15)
<u>Unobserved heterogeneity:</u>		
Constant type 1	0.33*** (0.13)	0.17*** (0.07)
Constant type 2	7.74*** (2.96)	4.58*** (2.03)
Probability type 2	0.61	0.59
Regions	Yes	Yes
Log-likelihood	-10118.8	-11540.4
Observations	27258	30591
N	5606	6288

Dependent variable: number of months to find the first job after completing vocational education. Significance levels: *** 1%; ** 5%; * 10%. Standard errors in parenthesis. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 9: **Hazard ratio estimates with unobserved heterogeneity (First significant job)**

	Vocational High School	Vocational College
Female	0.75*** (0.03)	0.84*** (0.03)
Age when finished education	0.96*** (0.01)	1.00 (0.02)
Duration dependence (log t)	0.76*** (0.02)	0.75*** (0.02)
<u>Type of school (ref.: Semi-private):</u>		
Private school	0.78 (0.13)	0.87 (0.08)
Public school	1.10** (0.05)	0.99 (0.05)
<u>Workplace training (ref.: No training):</u>		
Training_1 st	1.24* (0.15)	1.15** (0.07)
Training_previous	1.52*** (0.19)	1.25*** (0.07)
<u>Parents' education (ref.: Compulsory or less):</u>		
Upper secondary (father)	1.07 (0.07)	0.98 (0.05)
Tertiary (father)	0.94 (0.08)	0.86** (0.06)
“Don’t know” (father)	0.86* (0.08)	1.04 (0.10)
Upper secondary (mother)	0.93 (0.07)	1.04 (0.06)
Tertiary (mother)	0.84* (0.09)	0.89 (0.08)
“Don’t know” (mother)	1.11 (0.11)	0.99 (0.10)
<u>Program field (ref.: Agriculture-Fishery):</u>		
Manufacturing	1.22* (0.15)	1.13 (0.17)
Building	1.62*** (0.24)	1.44** (0.24)
Clerical and Transportation	1.24* (0.15)	1.06 (0.16)
Social services	1.17 (0.14)	0.92 (0.14)
<u>Unobserved heterogeneity:</u>		
Constant type 1	0.18*** (0.06)	0.10*** (0.04)
Constant type 2	23.12 (78.07)	12.32 (51.95)
Probability type 2	0.41	0.39
Regions	Yes	Yes
Log-likelihood	-13402.2	-15283.8
Observations	44732	49923
N	5430	6095

Dependent variable: number of months to find the first significant job after completing vocational education. Significance levels: *** 1%; ** 5%; * 10%. Standard errors in parenthesis. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 10: **Characteristics of first significant job** (% , employee workers)

	Vocational high school				Vocational college			
	Training_1 st	Training_previous	No training	Full sample	Training_1 st	Training_previous	No training	Full sample
Average duration*:								
Past job	17.64	17.98	16.22	17.78	17.39	17.95	16.72	17.58
N	1280	1429	67	2776	1184	1459	352	2995
Current job [†]	39.91	41.24	40.50	38.74	41.39	42.01	40.10	41.54
N	1232	1105	53	2390	1214	1346	297	2857
Type of Contract:								
Permanent	5.53	5.92	9.17	5.81	4.75	4.21	5.39	4.56
Fixed-term	41.13	41.48	36.67	41.19	45.62	45.31	40.21	44.89
No contract	2.03	2.68	1.66	2.34	2.34	1.82	3.08	2.17
Other	29.22	30.23	30.00	29.73	25.06	29.77	28.52	27.70
Don't know	22.09	19.69	22.5	20.93	22.23	18.89	22.80	20.68
Monthly wage**:								
< 433.55	6.65	5.56	9.17	6.17	6.26	4.24	5.55	5.21
433.55 to 750	35.43	32.68	27.50	33.89	33.53	30.12	29.89	31.50
750 to 1000	14.81	20.32	21.66	17.67	17.64	21.60	18.80	19.67
1000 to 1250	2.31	5.09	4.17	3.72	3.21	5.88	7.24	4.94
> 1250	0.48	1.23	2.50	0.90	0.66	1.18	0.77	0.92
Don't know	40.32	35.12	35.00	37.65	38.70	37.00	37.75	37.76
Occupation[‡]:								
White-collar	28.47	21.98	29.17	25.30	60.76	55.61	42.37	56.26
Blue-collar	71.54	78.02	70.83	74.70	39.24	44.38	57.63	43.75

Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

*In months. [†]Current job: a job that has not expired at the moment of the interview. **In euros. [‡]White-collar: Managers and Professionals; Technicians and associate professionals; Clerical support workers. Blue-collar: Service and sale workers; Skilled agricultural; Craft and related trade workers; Plant and machine operators; No qualified occupations.

(continued on next page)

Table 10: (continued)

	Vocational high school				Vocational college			
	Training_1 st	Training_previous	No training	Full sample	Training_1 st	Training_previous	No training	Full sample
Required degree:								
Compulsory	6.37	5.76	10.00	6.16	3.96	3.17	4.47	3.64
Academic high school	0.56	0.47	0.00	0.50	2.04	1.93	1.23	1.9
Vocational high school	49.60	47.51	47.50	48.52	8.67	8.73	13.25	9.21
Vocational college	3.07	3.24	0.83	3.10	53.04	52.76	40.52	51.52
University	2.70	2.33	0.00	2.46	1.67	1.85	1.39	1.73
Not required	36.27	38.95	38.33	37.63	28.23	29.77	37.29	29.97
Don't know	1.43	1.74	3.33	1.63	2.38	1.78	1.85	2.03
Sector:								
Agriculture-Fishery	1.51	2.01	0.83	1.74	0.96	1.00	1.08	0.99
Manufacturing-Extraction	22.57	23.91	26.67	23.33	22.06	23.53	23.27	22.90
Construction	11.62	14.21	14.17	12.95	6.55	8.63	12.02	8.15
Commerce	26.23	22.81	21.67	24.45	19.56	17.50	16.64	18.25
Hotel industry	4.02	9.27	10.00	6.74	3.71	5.17	7.40	4.82
Services	16.28	12.79	11.67	14.46	29.86	28.31	27.43	28.84
Education-Health	10.23	7.62	10.00	8.94	10.30	7.99	5.86	8.70
Other	7.52	7.38	5.00	7.39	7.01	7.88	6.32	7.35
N	2512	2534	120	5166	2398	2805	649	5852

Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table 11: **First significant job duration** (% , employee workers)

	Past job				Current job*			
	1 year	1-2 years	> 2 years	Individuals	1 year	1-2 years	> 2 years	Individuals
Vocational high school:								
Training_1 st	39.14	36.96	23.90	1280	3.33	9.01	87.66	1232
Training_previous	38.77	36.19	25.04	1429	2.81	5.23	91.96	1105
No training	52.24	26.87	20.89	67	3.77	13.22	83.01	53
Vocational college:								
Training_1 st	42.15	34.12	23.73	1184	3.21	5.26	91.53	1214
Training_previous	38.79	35.78	25.43	1459	2.30	5.49	92.21	1346
No training	42.33	34.66	23.01	352	3.37	9.10	87.53	297

*Current job: a job that has not expired at the moment of the interview. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.

Table A.1: Mean of variables by training status

	Vocational high school				Vocational college			
	Total	Training_1 st	Training_previous	No training	Total	Training_1 st	Training_previous	No training
Female	0.45	0.53	0.38	0.44	0.50	0.60	0.44	0.43
Age when finished education*	20.13 (1.40)	19.93 (1.35)	20.34 (1.41)	20.17 (1.46)	21.53 (1.18)	21.34 (1.18)	21.72 (1.12)	21.40 (1.26)
Type of school:								
Public	0.73	0.71	0.76	0.79	0.75	0.75	0.76	0.72
Semi-private	0.25	0.28	0.22	0.20	0.19	0.19	0.18	0.24
Private	0.02	0.02	0.02	0.01	0.06	0.06	0.06	0.03
Father's education:								
Compulsory or less	0.65	0.67	0.63	0.65	0.65	0.67	0.64	0.66
High school	0.11	0.11	0.12	0.11	0.14	0.13	0.15	0.13
Tertiary	0.07	0.06	0.08	0.12	0.11	0.10	0.11	0.09
Don't know	0.16	0.16	0.17	0.12	0.10	0.10	0.10	0.11
Mother's education:								
Compulsory or less	0.72	0.74	0.71	0.73	0.73	0.74	0.72	0.75
High school	0.10	0.10	0.10	0.12	0.13	0.12	0.14	0.12
Tertiary	0.04	0.03	0.05	0.05	0.06	0.05	0.06	0.04
Don't know	0.14	0.13	0.14	0.11	0.08	0.09	0.08	0.09
Workplace training:								
Training 1st	0.49	-	-	-	0.41	-	-	-
Training previous	0.48	-	-	-	0.47	-	-	-
No training	0.03	-	-	-	0.12	-	-	-
Program field:								
Agriculture-Fishery	0.03	0.22	0.19	0.14	0.21	0.23	0.20	0.13
Manufacturing	0.31	0.33	0.25	0.37	0.28	0.32	0.24	0.27
Building	0.05	0.15	0.16	0.18	0.12	0.12	0.12	0.14
Clerical and Transportation	0.35	0.18	0.23	0.19	0.15	0.13	0.17	0.18
Social services	0.27	0.13	0.16	0.12	0.24	0.20	0.27	0.28
Region:								
Northwest	0.08	0.11	0.13	0.11	0.14	0.13	0.16	0.12
Northeast	0.12	0.10	0.06	0.11	0.10	0.13	0.07	0.08
East	0.17	0.14	0.19	0.27	0.15	0.11	0.17	0.18
Centre	0.47	0.17	0.16	0.19	0.15	0.18	0.11	0.18
South	0.16	0.48	0.46	0.32	0.47	0.44	0.50	0.43
N	5725	2821	2762	142	6408	2648	3033	727

*Standard deviation in parentheses. Training_1st: Training as first labor experience. Training_previous: Training having previous labor experience.