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Finding a suitable job: The effect of the institutional context on self-perceived over-education

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Abstract

The current research compares the perception of over-education in four different European countries, resorting to European Household Panel Data. The results confirm that the type of educational system accounts for some of the cross-national differences in self-perceived over-education. In qualificational spaces, like Denmark, where vocational training receives more importance, self-perceived over-education is not associated as much with educational attainment as in the so-called 'organisational spaces', like Spain, France and Italy. Yet, the results confirm that, controlling for the system of education, the traits and regulation of the labour market also have an effect on over-education. Thus, in Spain, where temporary employment has soared in recent decades, this type of contract is clearly associated with the perception of over-education, to a much higher extent than in Italy or France. Temporary contracts in Spain may not work as a stepping stone for attaining a job suitable to the training received by the individual, as they may in the case of France or Italy. In sum, not only institutions *offering* skills and human capital, but labour market regulation as well, have a clear impact on the incidence of over-education.

Keywords

Labour market; systems of education; skill mismatch; over-education

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INTRODUCTION

The transition to adulthood was seemingly easy and clear-cut after the II World War. Both finishing studies and getting access to the labour market were well-defined milestones in the life history of an individual. The advent of post-industrial societies, with the leading role of services in the economy, and more specifically in employment creation, has been accompanied by labour market flexibility and an increasing importance of credentials for individual labour market performance. Post-industrial societies are thus characterised by long and complex transitions to adulthood (Baizan, 2003). Finding a suitable job is part of this transition. Besides being of interest to life-course analysts, job mismatch has economic and social implications; either much individual and social resources are wasted, in the case of over-education, or tasks may be underperformed, in the case of under-education. Moreover, over-education has been found to be associated with low productivity and job satisfaction (Tsang & Levin, 1985)

If the transition to adulthood has become more complex, there has also been an increasing availability of data with which to study it. A cross-national comparative study of this transition requires a panel survey that allows comparing incipient labour market trajectories in different countries. US, Canada and Germany have surveys of this kind, with a long enough trajectory, but they lack the necessary comparability. The European Community Household Survey (ECHP) has a much shorter span (eight years) but it does have this comparability, since the same questions were formulated in different countries.

The current work thus resorts to the ECHP in order to explore how institutional contexts affect the likelihood of feeling over-educated in relation to the main job carried out by the individual. More specifically, it provides evidence that it is not just the system of education that is to be blamed for the existence of over-education, but also the regulation of labour market. After revising the theories that have addressed the issue of job mismatch and over-education, the systems of education and labour market regulation in the countries selected for the study are analysed. The data and methods are then presented, including a discussion of the indicator used to measure over-education. The next section shows the results of a multivariate analysis, and the last one presents a discussion of the relevance of these results for the theoretical framework and, more specifically, for understanding (or identifying) the effects of national institutions on the perception of overeducation.

THEORETICAL FRAMEWORK

Different economic theories have attached more or less importance to over-education, considering it a more or less stable phenomenon. For Human Capital Theory, job mismatch is a negligible phenomenon. The market would naturally correct any mismatch between offer and demand of qualifications. For Occupational Mobility Theory, “part of the return to education is in the form of a higher probability of occupational upgrading, within or across firms” (Sicherman & Galor, 1990: 170-171). Occupational Mobility Theory acknowledges the importance of job mismatch, being especially interested in how workers correct it: through internal mobility (promotion) or external mobility (job change) (Sicherman & Galor, 1990; Sicherman, 1991). This theory predicts a positive effect of over-education on expected promotions and job

change. According to Job Competition Theory, job mismatch may be a more stable phenomenon. This theory highlights the role of jobs, instead of workers, as the origin of under-employment and over-education: employers hire the candidate that implies the least additional training costs to perform her job optimally (Rosen, 1972; Thurow, 1975; Spence, 1974; Sorensen & Kalleberg, 1981). Training should then be understood as an asset that locates individuals in a queue. Thus, over-education could be advantageous for the individual, but it does not guarantee that her job matches her qualifications. Credentialism attaches an even higher importance to credentials: education does not matter substantively for the qualification it provides; it matters for the signals it sends to the labour market. Credentials provide signals to locating a person positively or negatively within the labour market.

Credentialism, Job Competition and Occupational Mobility Theories are economic approaches to the relationship between training and employment. They share a common interest in the duration of job mismatch. Properly testing these theories would almost necessarily involve a duration analysis. The current research is not as interested in the duration of job mismatch, or its effect on employment opportunities, as it is in the factors that favour its existence. For this reason, Credentialism and Job Competition Theory will receive here less attention than the mechanisms to overcome job mismatch included in Occupational Mobility Theory.

These latter theories also share some limitations. First, they assume a static relationship between both training and employment. Time may change this relationship, though; a given occupation may have different skill requirements in different points in time. As it will be seen, some methodologies bear in mind the dynamic character of this relationship. Second, economic approaches to the relationship between education and work usually miss the mediating role of institutions. However, the validity of the rules stated by these theories is strongly conditioned by the institutional framework in which they are located (Müller & Gangl, 2003; Wolbers, 2002; Shavit & Müller, 1998). Two institutional clusters could make a difference in this respect: the educational system and labour market regulation. They are located at the beginning and end of the transition from education to work.

System of education

Allmendinger (1989) classified systems of education according to their degree of standardisation and stratification. Standardisation marks the homogeneity of the degrees at a given level throughout a given state. The deeper the standardisation of an educational system, the higher the confidence of employers in the quality certified by a given degree. Stratification is related to the degree of hierarchy and segmentation of the system. The higher the number of tracks of the educational system, and the more difficult it is to cross the barriers between them, the more stratified is the educational system. Allmendinger concluded that high standardisation and stratification contributes to a better matching between offer and demand of qualifications at an aggregate level.

Müller & Shavit fit some of Allmendinger's types with the 'organisational' and 'qualificational' spaces designed by the Societal Effect approach (Maurice, Sellier & Silvestre, 1982). In an 'organisational space' less attention is paid to vocational training and a perfect match between qualifications and tasks performed at the workplace. It is assumed that employers will make an additional investment in their employees' human

capital, in order to make them match. Conversely, in a 'qualificational' space, like the German or Danish ones, special attention is paid to vocational training and the perfect match between qualifications drawn from the educational system and the actual task requirements at the workplace. The 'qualificational space' would somehow correspond to a high degree of standardisation and stratification of the educational system, and would yield a less problematic integration of youth into the labour market[1].

It will be in 'organisational spaces', then, where the Job Competition Theory would have a stronger explanatory power. Given an imperfect adjustment between skills and tasks performed within the occupation, employers would consider how much *less additional investment in human capital* they can put forth in order to attain an optimal performance from their employees.

Labour market regulation

The *joint* effect of labour market regulation and educational system on the transition from education to work has already been explored (Ianelli & Soro Bonmatí, 2000; Gangl, 2000; Müller & Gangl, 2003). Comparing Italy and Spain, Ianelli and Soro-Bonmatí (2001) show that it is not just the extraordinary expansion of the educational system that explains the difficulties of Spanish youth to gain access to the labour market, compared with Italian people of the same age and circumstances. Instead, the widespread use of temporary contracts and the increasing segmentation of the labour market lies behind this unfortunate situation. But these authors only focused on the unemployment and precarious employment spells frequently suffered by many young Spaniards; they did not pay attention to how well training and the main task performed by the individual are matched.

The current research is guided by the idea that the responsibility for the job skill mismatch lies not just on the educational system, but also on the regulation of the labour market. It will then be necessary to compare countries with similar educational systems, in regards to their degree of standardisation and stratification, and different labour market regulation. Such is the case of France, Italy and Spain. Denmark will be included in the analysis as a contrast in this respect; the Danish educational system does not share the same degree of standardisation and stratification.

The likelihood of finding a job suitable to the training received throughout the period of full-time education is supposed to be lower in countries with generalist systems of education. Keeping the type of educational system constant, though, the incidence of job mismatch could diverge depending on labour market regulation. Temporary employment is usually regarded as a stepping stone in the labour market career of the individual. As such, it should not be highly associated with over-education. But the existence of a segmented labour market could imply a different logic. Workers in the secondary segment of the labour market might be less likely to enjoy human capital investment from their employers and adequate the job they perform to their initial training; conversely, workers in the primary segment of the labour market have both a

[1] It should be kept in mind, though, that 'qualificational spaces' correspond to countries, like Germany, Denmark or Austria, that, at least until recently, have usually shown more favourable macroeconomic conditions (Gangl, 2000). It is difficult to know, first, if these macroeconomic conditions account for easier entry of youth into the labour market more than the characteristics of their respective systems of education; second, to what extent macroeconomic conditions and systems of education are interrelated.

higher probability of receiving further training and of attaining a job match. Moreover, given their job security, workers in the primary segment of the labour market could be *under-educated*. In sum, over-education may be more prevalent in the secondary segment of the labour market and under-education, more prevalent in the primary segment.

EDUCATIONAL SYSTEMS AND LABOUR MARKET REGULATION IN SELECTED COUNTRIES

Educational systems

Amongst the European countries, a clear division could be made between those that have traditionally set up a formalised system of vocational education, with a clear occupational orientation and a system of apprenticeship at the workplace (Germany, Austria, Denmark, Luxembourg and The Netherlands) and those where "occupation-specific education was less common, hardly existed at all, or did not have a similarly prominent degree of occupational professionalism" (France, Belgium, Italy or Spain). In these latter countries "allocation of children to different tracks takes place –if at all- as late in the education process as possible, usually not before the end of the tenth school year, and is often connected with the transition from the lower to the upper level of secondary education" (Müller & Wolbers, 2000: 27-28). The preference for "theoretical, abstract knowledge over practical and utilitarian work abilities" usually turns vocational training into a "second- or third-best alternative to general education" (Ibid: 29). It also makes vocational training very much school-based, with very limited experience in the workplace. The lack of a deep, strong system of apprenticeship makes paradoxically easier the study of transition from school to work here[2]. With slight differences between them, France, Italy and Spain belong to this latter group[3].

Cross-national differences between these countries are more relevant in regards to tertiary education. Germany, The Netherlands, Denmark, Norway, and, to some extent, Austria and Switzerland, have a system of tertiary education characterised by its "parallel segmentation": along with the more formal, theory- and research-oriented network of universities, there is a parallel network of higher education institutions providing degrees "strongly oriented towards application, practice and occupational identities" (Müller & Wolbers, 2000: 33). Unlike this, French and Spanish systems of tertiary education are characterised by "sequential segmentation": the university system is homogenously divided in hierarchical segments ("cycles") corresponding respectively

[2] Couppié & Mansuy (2000) acknowledge the existence of "transitory intermediate statuses" in the transition from school to work. In these statutes, work and training are combined, so that it is difficult to attribute a role to the individual. Yet, they differentiate two groups of countries, according to the higher or lower incidence of these statutes. France and the Mediterranean countries are characterized by the low incidence of them, which does not surpass 10% of individuals. Therefore, they do not constitute a major problem in the analysis of the transition from school to work in the countries that are to be selected for the current analysis: France, Italy and Spain (Couppié & Mansuy, 2000).

[3] Britain and, to a lesser extent, Ireland belong to a third type, characterised by its low level of standardisation: regional diversity, the importance of private educational institutions and the traditional main role of civil society in organising and providing an educational choice has generated a wide range of experiences and opportunities. Students specialise quite early and "there is not even a well-defined concept of graduating from the secondary level; instead, performance in the individual specialisation areas on that level determines opportunity of access to various institutions and programmes at the tertiary level" (Müller & Wolbers, 2000: 28).

to a lower, a higher, and a post-graduate university degree: "access to the next higher cycle is dependent on successful completion of the preceding one" (Müller & Wolbers, 2000: 33; Albert et al., 2004)[4]. Italy does not belong to the former group, but it does not fit exactly with the latter group either. Although lower university degrees were introduced, both the number of universities providing them and the variety of degrees are lower than in Spain or France (Ianelli & Soro-Bonmatí, 2001). There are other differences between Italy, on the one hand, and France and Spain, on the other hand. First, Italian universities do not rely on the marks obtained during upper-secondary education in granting access to some university centres. Second, there is no connection between the kind of secondary education the individual has completed (Humanities, Sciences…) and the kind of career she is allowed to undertake (Ianelli & Soro Bonmatí, 2001: 4-5). Finally, the very few restrictions to accessing the university system are combined in Italy with a high dropout rate (Brunelli et al., 2000). Because university cycles allow for alternative graduation and stopping points, the scarcity of these cycles in Italy may contribute to the dropout rate[5].

Labour market regulation

If the selected countries show quite similar systems of education, their labour market regulations diverge (Siebert, 1997). Labour market regulations seem to be more open to "flexibility at the margin" in Spain than in Italy or France. The level of fixed-term employment in Spain clearly stands out in relation to France and Italy. Although the level is much lower in these latter countries, France experienced, along with the Netherlands and Greece, a steady increase throughout 1989 and the early 1990s. Italy showed a much more stable scenario (see table 1, below).

1. Spain

During the 1970s and early 1980s, unemployment in Spain soared, reaching a peak of almost 25% of the workforce in 1985. Faced with such a problem, the newly elected Socialist Workers' Party (PSOE) introduced in 1984 the first of a set of reforms that strongly deregulated the Spanish labour market and were aimed at fostering employment growth. The 1984 reform allowed fixed-term employment for specific reasons (Toharia & Malo, 2000: 307-309). "Some of these reasons, however, could be interpreted very broadly", so that the law actually worked as an incentive for the generation of temporary employment. In 1988 the PSOE launched a 'youth employment programme' that introduced cheaper contracts for people under 25 without prior job experience (Toharia & Malo, 2000: 309). As a result of all these measures, Spain experienced the steepest growth of temporary employment in Europe: from 15% of total employment in 1987 to 35% in 1995 (Schöman, Rogowski & Kruppe, 1998: 83). Only in the mid 1990s did policy makers begin to notice the adverse consequences of

[4] As it happens in secondary education, Britain constitutes a third distinctive model that is characterised by a wide variation in the criteria and requirements of access to tertiary education, the existence of former institutions of Further Education (Polytechnic Universities), somewhat similar to the *Fachhochschulen*, that have been recently integrated into the British university system, and an increasing modularisation. The Irish system has many similarities to the British one, although "with fewer opportunities for vocational training" and more importance attached to general education (Müller and Wolbers, 2000).

[5] This could mean that many post-secondary, pre-university graduates are actually individuals who have made a long-term investment in human capital that has not reached the attainment of a university degree. Italian employers might be sensitive to this non-completed university education. If such is the case, neither objective nor subjective over-education could be as high as expected.

temporary employment. In 1997 a further labour market reform was approved, including a new 'indefinite contract' that was less secure than the old permanent ones, and introducing incentives for the conversion of fixed-term contracts into permanent ones (Toharia & Malo, 2000: 310-311). Even so, Spain is still today the country with the largest share of temporary employment in Europe: over 30% of its dependent employment.

Table 1. Fixed-term employment as percentage of total dependent employment

	Denmark	Spain	France	Italy	Eur.12
1983	--	--	2.4	6.6	--
1984	9.1	--	2.3	5.0	--
1985	8.5	--	3.7	4.8	--
1986	7.4	--	5.4	4.5	--
1987	6.4	15.7	6.1	5.3	7.4
1988	6.6	22.5	6.8	5.8	8.1
1989	5.7	26.7	7.5	6.3	8.6
1990	6.9	30.0	9.5	5.2	9.0
1991	8.0	32.4	9.2	5.4	9.0
1992	8.0	33.5	9.7	7.4	9.7
1993	7.7	32.1	10.1	5.9	9.3
1994	8.9	33.6	10.2	7.2	9.8
1995	8.8	35.0	11.6	7.1	10.3
1996	7.7	33.6	11.8	7.4	10.4

Source: Eurostat European Labour Force Survey ; Schömann, Rogowski & Kruppe's calculations (1998)

2. Italy

As it was in Spain until the 1980s, the Italian labour law in some cases dates back from the Mussolini period, entailing serious restrictions to both individual and collective dismissals. The permanent contract is the norm. These restrictions were reinforced in the 1960s and 1970s (Schömann, Rogowski & Kruppe, 1998: 48-50). The importance of small firms, where the constraints of the law are lower; non-dependent labour; and black economy and "social shock absorbers", as the Wage Supplement Fund (see below) all conferred the Italian economy with the flexibility required to face economic crises and uncertainty during the 1970s (Samek Lodovici, 2000). For these reasons, the Italian labour market can justifiably be considered 'rigid'.

Growing international competition, together with declining union power, opened the way to numerical flexibility in the 1990s. Regarding collective dismissals, which had not been allowed before, a European Union Directive in 1991 permitted "collective dismissals for reasons of economic hardship, organisational restructuring, or employment adjustment" in some sectors (Schömann, Rogowski & Kruppe, 1998). Legislation on individual dismissals is still "extremely restrictive". In regards to hiring, "atypical contracts for dependent employment, such as fixed-term, part-time and agency work have been liberalised only in 1996-97" (Samek Lodovici: 281). In 1984 work-training contracts for young people (*contratto di formazione lavoro*) were instituted, but they were designed "to improve the chances of permanent employment for young people in need of training", so its introduction did not dramatically increase hiring probabilities (Ibid: 282). The 1997 Treu Packages "devised a new model of work training and apprenticeship contracts and new temporary contracts to ease school-to-work transitions" (283). This package also increased the number of times fixed-term

contracts were renewable and reduced sanctions in cases of violation of contract regulations. All this has made fixed-term work increase, but not dramatically. Fixed-term employment in 1997 amounted just to 8.8% of total employment, a figure much lower than in the Spanish case (Samek Lodovici, 2000).

A possible reason why fixed-term employment is still marginal in Italy is that unemployment has not been as severe as in Spain. Most authors agree, however, that the key to understanding why neither the Italian economy nor Italian employers felt the urge to introduce numerical flexibility is the widespread use of Wage Supplement Funds (CIG) and early retirement (Samek Lodovici, 2000; Schömann, Rogowski & Kruppe, 1998). CIGS "supplemented income for a period that could last several years", so that "[w]orkers were not laid off; instead they maintained their employment contract with the firm". As stated by Schöman et al., "the Wage Supplement Fund (CIG) permitted work force adjustment despite rigid dismissal protection" (52).

3. France

Not long before winning the general elections in 1981, the French Socialist Party issued the so-called *Lois Aroux* (1982-83), which increased the minimum wage and welfare benefits. From one perspective, they created jobs in the public sector and generally strengthened workers' rights; from the opposite point of view, they increased French labour market rigidity. The arrival of a right-wing party to office in the late 1980s was accompanied by measures aimed at introducing numerical flexibility in the French labour market: the removal of mandatory prior authorisation for collective dismissals on economic grounds and the easier use of temporary work. "The initial impetus towards flexibility provided by the removal of prior authorisation was partly off-set by the more stringent constraints subsequently imposed on firms firing workers, larger firms in particular, whose obligations became more binding" (Malo, Toharia & Gautié, 2000: 250).

The 1986 regulations issued by the Chirac government opened the way to "hire fixed-term or temporary workers for their normal, non-temporary, activities, while the maximum period for such arrangements was extended to two years" (250-251). As a result, fixed-term employment grew in France for the rest of the decade to reach 10-11% per cent of employment at the end of the decade. It remained more or less stable afterwards. Nevertheless, these changes have been perceived as piecemeal, never challenging the core of French labour law. They were not thought to radically alter the employment security of all workers.

DATA AND METHODS

Data

Two different surveys could help to answer the research question: the European Community Household Panel Survey (ECHP) and the different labour force surveys carried out in the year 2000, which Eurostat coordinated along with the addition of a module including questions explicitly aimed at exploring the transition from education to work. This module was labelled EULFS 2000 Module ("From School to Work"). Both datasets have advantages and disadvantages that I will discuss next.

The EULFS 2000 Module was carried out in fourteen EU member states and six Central/Eastern European countries. Instead of yielding a single dataset, as was the case with the ECHP, the EULFS 2000 resulted in different national datasets that were necessary in order to make cross-national comparisons. Cross-national comparability is thus technically more difficult[6]. The questions of the Module were addressed to the members of the sample who had between 15 and 35 years of age at the moment of the interview and had finished their full-time vocational training or general education in the prior five or ten years. The EULFS 2000 Module entails several advantages for the current research: first, the size of the sample by country is much larger than in the ECHP; second, education has been registered in more detail than in the ECHP; third, given the sample size and the more detailed registration of occupation and education, the conditions for building up an objective indicator of job mismatch seem to be better; finally, an explicit interest in exploring the transition from school to work guided the endeavour. In return, the EULFS 2000 Module has not yielded a unique dataset for all the countries involved, as did the ECHP. Moreover, as a labour force survey, it does not have as wide a range of variables as the ECHP. Third, it does not include a question that permits the creation of a subjective indicator of job mismatch. Finally, it is not panel data, which prevents an eventual duration analysis of job mismatch.

The European Community Household Panel (ECHP UDB, 1994-2001) includes personal and household information for fifteen countries along eight waves, from 1994 to 2001. As panel data, it allows for duration analyses of the transition from school to work, in its different dimensions. Although the size of each national sample is normally smaller than in the EULFS, the range of variables is much larger. For instance, it includes information on the household and personal budget that is obviously not included in a standard labour force survey. The ECHP permits both cross-sectional and longitudinal analyses of job mismatch. Moreover, it includes information that can be used for both an objective and a subjective indicator of over-education. For all these reasons, the ECHP seemed suitable for an exploratory analysis of the institutional determinants of over-education.

Methods

The research question naturally calls for an analysis of the duration of the period from finishing education or training to the moment the work performed by the individual suits the training received before. Resorting to subjective, and more appropriately to objective indicators, this would mean an event-history analysis of job mismatch. In turn, this would require a clear definition of the origin and destinations of the period of study. But the moment when the individual finishes his/her period of education may not be clear-cut. For some systems of education, finishing education and beginning labour market activity is a blurred transition. Second, the destination of the period of study may not be fully clear either: it may be marked by the attainment of a full-time job or a stable one. Finally, the period of study is far from homogenous: it could be formed by spells of unemployment or inactivity and precarious, temporary jobs. Reaching a job that matches the qualifications (skills) acquired in the educational system may take a rather long process of adaptation.

[6] Ianelli assessed the comparability of the data provided by each one of these surveys (Ianelli, 2002).

An event-history analysis of job mismatch, theoretically coherent as it is, does not form part of this *exploratory* research of over-education. Instead, over-education has been analysed by means of a cross-sectional analysis, selecting one of the first waves of the ECHP, so that the effect of attrition over the size of the sample is reduced as much as possible. The first wave (1994) lacks essential information on the type of contract. For this reason, the second wave (1995) was selected. For this wave, logistic regression has been applied to data on Denmark, France, Italy and Spain, in order to assess the likelihood of the respondent to regard herself as over-educated or not.

Dependent variable

The matching between the main job carried out by the individual and the qualifications attained throughout the period of education or training could be captured by objective or subjective indicators (Groot & Maassen van den Brink, 2000). As for objective indicators, several possibilities have been suggested (Garcia Espejo, 1999; Groot & Maassen van den Brink, 2000). In some national case studies, scales have been set up in order to measure the logic, mathematical and linguistic skills required to perform some tasks. Such is the case of the General Education Development (GED), developed in the United States. Yet, it is more common to attribute a level of education to each occupation, within the range of occupations that constitute the International Classification of Occupations. In the Spanish case, Garrido has made a scale that attributes educational level to the different occupations of the National Classification of Occupations (CNO, Clasificación Nacional de Ocupaciones) of 1979 (Garrido, 1991: 168-203). A third objective indicator of over-education is the so-called 'statistical method'. According to this method, a worker would be overeducated when she possesses a number of years of formal education above a standard deviation from the mean or the mode of her occupation (Halaby, 1994). This method does not consider the relationship between skills and work as static; rather it is considered dynamic (García Montalvo, 1995; Kiker et al., 1997).

Objective indicators are not susceptible to psychological biases, but they have their own disadvantages. First, a same occupation or job may have different skill requirements in different times and institutional contexts. Moreover, as argued by Alba-Ramirez, "a particular occupation is likely to have different characteristics across industries, regions, firms, etc." (Alba-Ramírez, 2001: 262). Besides, an objective indicator may not consider the existence of intra-occupational differences in skill requirements that might be important, especially in the case of some occupational categories (Hartog, 2000; Madrigal Bajo, 2003). Because of these disadvantages, I am inclined to choose the subjective approach for an exploratory study of the match between skills and jobs.

There are two possible subjective indicators of over-education: either workers could be asked if they feel over-educated or under-educated for the work they do, or they could be asked what the minimum educational requirement would be for a new worker in the job they perform (Groot & Maassen van den Brink, 2000: 150). I would rely on the perception of the individual, resorting to the following question of the ECHP: "Do you feel that you have skills or qualifications to do a more demanding job than the one you have now?" This subjective assessment of over-education does not have the problems of objective indicators mentioned above; yet, its validity should be critically considered, since workers may mentally *adjust* their training to the work they are performing. In

other words, a problem of cognitive dissonance might make them *assume* that training is suitable when it is not actually the case (Madrigal Bajo, 2003).

Independent variables

The first set of models of logistic regression (Models 1 & 2, see Annex) includes age, gender and education. Age has been split up into five dummies, corresponding to the following groups: 17-25; 26-35; 36-45; 45 or more. The latter has been used as the reference group. Self-perceived over-education is expected to be highest in the first age groups and decrease as age moves to the reference group. In regards to gender, female workers' self-perceived over-education is assessed relative to those of male workers. Education is recorded in the ECHP in three categories, corresponding to "recognised third level education" (ISCED 5-7); "second stage of secondary education " (ISCED 3); and "less than second stage of secondary education" (ISCED 0-2). The latter works as the reference category in this analysis. Relative to this reference level, self-perceived over-education is expected to be high in the first category and decrease towards elementary education.

Models 3 to 5 add variables related to labour market performance. Tenure has three categories, corresponding to having held a job for less than one year in the moment of the interview, for a period between one and five years, or for more than five years. This latter category has been used as the reference for assessing the effect of belonging to one of the other two time-frame categories on the dependent variable. In regards to the type of employment, the effect of holding a fixed-term job is assessed relative to having a permanent job, which works as the reference category. In order not to lose the individuals who are self-employed (they do not have a contract), they have also been included in Model 5. The effect of belonging to this group is also assessed relative to having an indefinite contract. Self-employed workers disappear in the following models.

The third set of models includes external and internal mobility. As explained in the theoretical framework, these are means to correct over-education. In regards to external mobility, a new variable was created from the question in the ECHP asking about the reasons for "stopping in previous job" in the two years prior to joining the survey. The first category corresponds to those who answered that such a change occurred because the interviewee "obtained a better or more suitable job". A dummy variable labelled 'Job Change 1 (Better Job)' was subsequently created. 'Job Change 2 (Lay Off / End of C)' corresponds to those who said that the reason for stopping their previous job were either the "end of [their] contract" or because they were "obliged to stop by [their employer]". Finally, 'Job Change 3' corresponds to the remaining possible reasons (marriage, childbirth, illness…) provided to answer the question. The reference category for all of them is not having stopped in the previous job; that is, having *stayed* in the job the interviewees are holding. It must be expected that those who have changed are less likely to regard themselves as over-educated; at least, this must be the case with the first category ('Job Change 1 (Better Job)'). Regarding internal mobility, there is no explicit information in the ECHP that captures it. Instead, "training/education provided by the employer" has been used as a proxy. It is expected that those who claim to be in a process of training will regard themselves as less over-educated than those who are not.

The effect of the educational system on self-perceived over-education will be assessed by comparing the results of these models in Denmark, on the one hand, and the other three countries (France, Italy and Spain) that jointly represent a different system of education, on the other hand. *Ceteris paribus*, the likelihood of making the transition to a first significant job matching the qualifications acquired by the individual should be lower in generalist systems of education, characterised by a loose fit between educational degrees and work actually performed in the labour market. Comparing the results in the three countries (France, Italy & Spain) where the system of education is similar but labour market regulation diverge would allow us to assess the effect of the latter on self-perceived over-education. We would expect to find that temporary (fixed-term) employment is more closely associated to self-perceived over-education where the rate of temporary employment is higher and the labour market is more clearly segmented. Such is the case of Spain, in relation to France or Italy.

RESULTS[7]

The effect of gender on self-perceived over-education is significant in Denmark, France and Italy, but it has an unexpected inverse sign: being a female worker seems to be associated with a *lower* likelihood of perceiving oneself as over-educated[8]. Although the difference between male and female workers is not strong (the odd-ratios are close to one), the likelihood of feeling over-educated decreases by a factor change of 0.78 when comparing female Danish workers with their male counterparts (Model 1). The odds ratio for the other three countries is quite similar. The result is more puzzling if we consider that the effect of gender remains significant after controlling for educational attainment and the rest of the variables entered into the analysis. This result contradicts the idea that women are more likely to perceive themselves as over-educated, due to discrimination in access to jobs. An alternative explanation of this finding is that self-perceived over-education is closely associated with job satisfaction: it is well-known that female job satisfaction is higher than male, as this fact is quite consistent cross-nationally and when comparing different moments in time[9].

Age dummies also have a significant effect on self-perceived over-education[10]. Unlike what Credentialism would have predicted, age does *correct* the perception of over-education. Relative to the oldest category of workers, workers belonging to the other three are significantly more likely to perceive themselves as over-educated (odds-ratio above 1) and this likelihood decreases with age. The decrease is not so obvious in French, Italy and Spain, where the results for the 'Age 17-25' and 'Age 26-35' are not so different. The association between age and self-perceived over-education is particularly strong in Denmark, where the youngest workers are clearly more likely to feel over-educated than the next age group. The effect gets even stronger when

[7] See Annex, Tables A3-A6

[8] The effect in Spain is weaker and it loses significance when controlling for training and job change.

[9] In the 13th. Annual Workshop of the 'Transitions in Youth Conference' (Valencia, September 2005), where this work was presented, it was suggested that a lower likelihood of female workers perceiving themselves as over-educated of female may correspond to their higher likelihood of being satisfied with their jobs.

[10] Age was found to correlate strongly with tenure. For this reason, age dummies were omitted from one of the Models in which variables related to labour-market performance were added to the analysis (Model 3). As it could be seen in Model 4, France & Spain are the only two countries where both age and tenure dummies remain significant when they are introduced together in the logistic regression.

controlling for the type of contract. Amongst the three Southern European countries, odds-ratios for the first two age cohorts are higher in Spain than in France or Italy. Young Spanish cohorts seem to perceive themselves as more over-educated in relation to older cohorts than in the case of France or Italy. This obviously speaks of the effort the Spanish society has recently made in educational terms, but it might also be a sign that, in terms of job match, this effort is still to be rewarded.

In regards to educational attainment, the results confirm the initial expectations. In relation to elementary education (reference category), having a university degree means a higher likelihood of perceiving oneself as over-educated. The effect of holding a university degree, in turn, is stronger than the effect of having a post-compulsory secondary diploma. This order holds constant cross-nationally. With the exception of Denmark, coefficients and odds-ratios do not change substantially when other variables are included in the model. Even so, significant cross-national differences appear. The association between educational attainment and self-perceived over-education is generally weaker in Denmark than in the other three countries. Although the samples are not directly comparable (logistic regressions have been run for each national sample separately), it is remarkable that the odds-ratios for Denmark are considerably lower than for France, Italy and Spain. Considering Model 7, for instance, we may observe that, whereas the likelihood of perceiving over-education increases by a factor change of 1.35 when comparing Danish university graduates with Danish workers with elementary education, it only increases by a factor change of 1.88 when making the same comparison in France. The corresponding odds-ratios in Italy and Spain are even higher: 3.65 and 3.40, respectively. As for post-compulsory secondary education, the likelihood of Danish workers with this educational attainment perceiving themselves as over-educated is not significantly different from those with only an elementary education, when controlling for all the factors in Model 7. This is not the case in France, Italy and Spain, where post-compulsory secondary education is still significantly associated to a higher level of self-perceived over-education, relative to the reference group. We may conclude, first, that educational attainment is more strongly associated with self-perceived over-education in France, Italy or Spain than in Denmark. This fits with the idea that more generalist systems of education, where vocational training receives less attention, perform worse in regards to job mismatch than more standardised and stratified educational systems, where vocational training receives more importance. Even so, meaningful differences appear between France, on the one hand, and Italy and Spain, on the other. The proliferance of over-education amongst university graduates possibly conditions the over-education perceived amongst workers with secondary education, since the former occupy the jobs formally meant for the latter. The high odds-ratio perceived for workers with post-compulsory secondary education in Spain could be a sign that they are expelled for the jobs theoretically assigned to them, more so than in France or Italy.

Does tenure correct the perception of over-education? A long-term relationship with the employer could benefit the employee in terms of training and possibilities of promotion, so that she could finally attain a match between her qualifications or skills and the work she carries out. Certainly, tenure is associated with self-perceived over-education in the four countries of study, but to a different extent[11] (Models 3 & 4). The strongest

[11] When controlling for age, the association between tenure and self-perceived over-education disappears in Denmark and Italy (Model 4). This may be due to the fact that age is more clearly associated to tenure

association occurs in Spain, and the lowest in Italy. France and Denmark are intermediate cases. In relation to the reference group (workers with more than five years-long tenure), the likelihood of Danish workers that have held jobs for less than one year perceiving themselves as over-educated increases by a factor change of 1.45; for Danish workers with 2-5 years tenure, it increases by a factor change of 1.36 (Model 3). We observe similar, though slightly lower, odds-ratios for the corresponding groups in France. Controlling for education, tenure does not seem to have as strong an effect in Italy: workers holding their job for less than one year are only slightly more likely to feel over-educated than the reference group. In Spain, tenure seems to be a good predictor of self-perceived over-education: holding a job for less than one year brings twice the likelihood of perceiving oneself as over-educated than the reference group (odds-ratio, 2.24), and the likelihood of workers with 2-5 years-long tenure feeling over-educated increases by a factor change of 1.16, relative to the reference group. The strong relationship between tenure and over-education in Spain could be not so much the result of the additional training granted to workers holding jobs for more than five years (and the subsequent match between qualifications and jobs) as the result of the remarkably poor perception of this match between workers with shorter seniority.

Holding a permanent or fixed-term contract is an essential part of the analysis[12]. In this regard, it should be noted first that fixed-term employment does not have any effect on the perception of over-education in Denmark. Amongst the other three countries, it does have an effect in France and Spain, the two countries where temporary employment has grown steeper (see Table 1, above). Yet, when controlling for job change and training provided by the employer, holding a temporary contract remains statistically significant only in Spain[13] (Models 6 to 8). Regardless of gender, educational attainment, job change (external mobility) or training provided by the employer, workers holding a temporary (fixed-term) job in Spain are more likely to perceive themselves as over-educated than those holding a permanent job. Even in countries like France or Italy, temporary contracts might be performing a "stepping-stone" role that does not function in Spain, where these jobs are firmly associated with perceived over-education. We might think that this is just an effect of age compounded with educational attainment, given the fact that young age cohorts in Spain have enjoyed much better educational opportunities than prior generations. Yet, unlike France, age does not deprive fixed-term employment from its statistical significance in Spain (Model 7).

The three last models are aimed at incorporating training (as a proxy of internal mobility) and job change (external mobility). In regards to job change, the effect of three dummy variables on the dependent variable is assessed in relation to those who have not changed their job. As the results show, the three variables have a significant effect on the dependent variable, and this effect has the same sign. It might not be a surprise that those who have had to change their jobs for "other reasons", or were forced by their employer or their contract, are more likely to regard themselves as over-educated than those who have not changed their jobs. Yet, it is unexpected that those who have changed their job to get a "better" one feel the same. Perhaps job change is

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in these countries than in France or Spain. It is thus difficult to state that tenure is less important in Denmark or Italy than in the other two countries.

[12] Colinearity was detected between tenure and this variable. For this reason, tenure was excluded.

[13] Fixed-term contract is again statistically significant for France in the last model (Model 8), but it should be noted that age is not included in the model. Conversely, even when controlling for age, temporary employment in Spain remains strongly associated with self-perceived over-education.

generally capturing the dissatisfaction with the current labour market situation of the interviewee, rather than the capacity of external mobility within the labour market to correct over-education.

In regards to training received by the employer, it was expected to correct the perception of over-education. Surprisingly, it is positively associated with such a perception. Workers who receive such type of training are likely to be those who have received more than elementary, or compulsory education. Moreover, they may have higher expectations and may be more motivated. An alternative explanation of these results could be that *precisely because* they are receiving such a training, they are more likely to perceive themselves as overqualified in relation to the task they currently perform. It should be kept in mind that the variable informs us about training *currently* provided by the employer. The effect of training might be better assessed if training *has already been* provided.

CONCLUSIONS AND DISCUSSION

Education has often been blamed for the lack of adjustment between skills provided and demanded by the labour market. In the 1980s in Spain the university system was commonly called "a factory of unemployment". A cross-sectional analysis of self-perceived education based on data drawn for Denmark, Italy, Spain and France from the second wave (1995) of the European Household Panel Survey allows the qualification of this judgement, casting light on the role of labour market regulation and temporary employment for over-education. Four countries have been selected for the analysis: Denmark represents standardised and stratified educational systems ('qualificational spaces'), where vocational training receives more importance. France, Italy and Spain have been selected as representatives of less stratified, more generalist systems of education, where vocational training receives less attention, it is more theoretically biased, and less attuned with labour market demands.

The results confirm that over-education is not such a negligible phenomenon as Human Capital Theory would implicitly state, but they do not allow an assessment of its duration. Although a duration (event-history) analysis has not been conducted, the effect of age implies a reasonable suspicion that over-education is not a permanent phenomenon either, as Credentialism would defend; on the contrary, age seems to have a decreasing effect on self-perceived over-education. Regarding Occupational Mobility Theory, the results are puzzling: both job change and training provided by the employer are *positively*, instead of negatively, associated with over-education.

Beyond these economic perspectives on over-education, the results still show cross-national variation that educational systems may account for. First, the results suggest that 'qualificational spaces' perform better than 'organisational' ones, in regards to self-perceived over-education,. Educational attainment is not as strongly associated with self-perceived over-education in Denmark as it is in Spain, France or Italy. Even so, the effect of educational attainment still reveals substantial differences between France and Italy, on the one hand, and Spain, on the other hand. Moreover, controlling for gender, educational attainment, tenure (or age), job change and training provided by the employer, holding a fixed-term contract seems to be positively associated with self-perceived over-education in Spain, which is not the case in Italy, and only the case in

France when age is not included in the analysis. The results possibly reveal that temporary contracts do not perform the same role in France or Italy as they do in Spain. Consisting of more than 30% of the dependent working population, temporary employment in Spain is not a stepping-stone to a better position in the labour market, rather it is a more stable situation that may impact the possibility of being (and staying) overqualified.

One of the main areas of development in Spanish welfare during the 1980s was education. Spanish society made a big effort to expand educational opportunities for its members. Quite unfortunately, the expansion of the Spanish educational system coincided with a strong deregulation of the labour market that soon made the rate of temporary employment surpass 30% of the dependent working population. The Spanish society was providing itself with a more qualified workforce, whose qualifications and size was rapidly growing, while the regulation of the labour market was providing employers with incentives for an extensive and indiscriminate use of temporary employment, not fully compatible with long-term investments in human capital and improvements of work productivity.

Future research should complement the empirical evidence provided in this paper in two ways. First, the analysis should be replicated by using an objective indicator that does not bear the problems of correspondence between occupations and skills, which objective indicators usually have. A contrast of the results of applying objective and subjective indicators to the same data drawn from the ECHP for the four countries of study would shed light on the relative validity of subjective indicators of over-education. Second, a longitudinal analysis of over-education would allow us to know to what extent fixed-term employment *delays* the match between jobs and skills in the different countries of study. The results have demonstrated that fixed-term employment is positively associated with self-perceived over-education in Spain: how long does it take for a temporary worker in Spain, if ever, to finally attain a job suitable to her initial training? Finally, an analysis of the trends in the quality of employment generated in the Spanish labour market during the 1980s and 1990s, and a comparison with educational attainment of the Spanish labour force, would allow a confirmation of the mechanism through which labour market regulation might have had an effect on over-education in Spain.

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ANNEX

Table A1. GROWTH IN VALUE ADDED PER EMPLOYED PERSON IN BROAD SECTORS
Annual average percentage growth rates

	Total Manufacturing		**Total Services**	
	1980-1990	1990-2001	1980-1990	1990-2001
Australia	2.0	2.4	0.5	1.8
Austria	3.7	3.7	1.3	0.6
Belgium	4.7	2.9	0.9	0.7
Canada	2.5	3.0	0.6	1.3
Denmark	1.1	2.6	0.9	1.2
Finland	4.6	4.9	1.6	1.4
France	2.7	3.5	1.6	0.2
Germany	1.7	2.4	1.0	1.2
Greece	--	3.5	--	2.4
Hungary	--	7.6	--	1.8
Italy	2.7	1.7	0.1	0.6
Japan	3.9	2.6	2.5	1.0
Korea	5.6	8.8	2.9	1.7
Luxembourg	6.4	3.3	4.1	0.5
Netherlands	3.1	2.6	0.1	0.5
New Zealand	1.7	2.2	0.7	0.8
Norway	2.1	0.9	0.8	1.8
Poland	--	9.4	--	1.8
Portugal	2.3	3.0	1.7	1.0
Slovak Republic	--	9.5	--	3.7
Spain	2.5	1.6	0.4	0.2
Sweden	2.8	6.1	0.9	1.6
United Kingdom	4.6	2.6	0.8	1.9
United States	3.5	3.5	0.6	1.6

Source: OECD STAN Database and OECD STAN Indicators Database, 2004; extracted from OECD (2005)

Table A2. Descriptive statistics (percentages)				
	Denmark	**France**	**Italy**	**Spain**
Overed (yes)	60,5	50	50,5	49,8
Overed (no)	39,5	50	49,5	50,2
Male	48,7	47,9	48,9	48,1
Female	51,3	52,1	51,1	51,9
Age 17-25	14,9	17,8	18,4	19,3
Age 26-35	20,2	18,5	19,4	18,3
Age 36-45	19,6	19,2	16,9	16,5
Age 46+	45,3	44,6	45,2	45,8
Higher Educ.	28,8	18,5	6,5	13,8
Second. Educ.	36,5	35,0	33,3	17,9
Elementary Educ	34,7	46,5	60,2	68,2
Tenure <=1	55,9	61,3	64,9	73,5
Tenure 2-5	12,8	9,5	7,1	6,3
Tenure 5+	31,3	29,1	28,0	20,2
Indefinite contract	86,5	88,7	87,7	61,4
Fixed-term contract	13,5	11,3	12,3	38,6
No job change	19,0	33,9	46,2	28,8
Change1 (“Better job”)	24,2	22,2	20,6	170
Change2 (“Other reasons”)	53,5	43,9	33,3	54,2
On-the-job Training (yes)	71,0	--	15,6	29
On-the-job Training (no)	29,0	--	84.4	71
Source: European Community Household Panel (ECHP UDB, 1994-2001): 1995				

TABLE A3. Determinants of perception of over-education in DENMARK (1995)

Dependent variable is 1 (yes) and 0 (no)
Entries are odds ratios (coefficients and standard errors in brackets)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Female	,78** (-,243; ,07)	,77** (-,252: ,07)	,79** (-,228; ,07)	,77** (-,252; ,07)	,72** (-,318; ,07)	,70** (-,348; ,08)	,70** (-,355; ,08)	,72** (-,323; ,07)
Age: 17-25	2,33** (,846; ,12)	2,62** (,964; ,13)		2,57** (,946; ,14)	3,56** (1,27; ,16)	3,69** (1,30; ,16)	3,52** (1,26; ,16)	
Age: 26-35	2,27** (,821; ,09)	2,23** (,805; ,09)		2,21** (,795; ,10)	2,22** (,801; ,09)	2,32** (,842; ,10)	2,17** (,778; ,11)	
Age: 36-45	1,74** (,556; ,09)	1,69** (,527; ,09)		1,68** (,523; ,09)	1,63** (,494; ,09)	1,77** (,572; ,09)	1,70** (,535; ,10)	
Higher education°		1,52** (,419; ,10)	1,47** (,390; ,09)	1,52** (,419; ,10)	1,39** (,335; ,10)	1,34** (,296; ,11)	1,35** (,302; ,11)	1,26* (,239; 10)
Secondary education°		1,29** (,261; ,09)	1,34** (,295; ,09)	1,29** (,262; ,09)	1,20+ (,185; ,10)	1,16 (,155; ,11)	1,17 (,157; ,11)	1,21+ (,197; ,10)
Less than one year tenure°			1,45** (,376; ,08)	1,03 (,029; ,10)				
2-5 years tenure°			1,36** (,313; ,09)	1,01 (,014; ,10)				
Fixed-term job					1,04 (,044; ,12)	1,08 (,084; ,12)	1,03 (,034; ,12)	1,17 (,162; ,12)
Self-employed					,58** (-,531; ,13)			
On-the-job training						1,17+ (,165; ,09)	1,25* (,194; ,09)	1,27** (,244; ,09)
Job Change 1 (Better job)°							1,09 (,091; ,11)	1,42** (,354; ,10)
Job Change 2 (Lay Off / End of C)							1,28* (,251; ,11)	1,65** (,501; ,11)
Job Change 3 (Other reasons) °							1,27* (,243; ,11)	1,54** (,438; ,10)
Constant	1,07	,83	1,11	,82	,96	,86	,77	,99
N	3242	3218	3219	3218	3072	2818	2815	2816
LR Chi-square	104,57	121,65	46,39	121,72	154,34	137,88	144,42	57,96
DF	4	6	5	8	8	8	11	8
Pseudo R² (Nagelkerke)	,04	,05	,01	,05	,06	,06	,06	,02
% Correctly classified	61,1%	61,6%	60,9%	61,6%	62,6%	63,1%	63,7%	62,3%

Notes: p<0,01=**; p<0,05=*; p<0,10=+.
º Reference categories: education=elementary; tenure=more than 5 years; type of contract=indefinite; job change=non-movers; age= 46 years old or more.

TABLE A4. Determinants of perception of over-education in FRANCE (1995)

Dependent variable is 1 (yes) and 0 (no)
Entries are odds ratios (coefficients and standard errors in brackets)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6 (1)	MODEL 7	MODEL 8
Female	,74** (-,299; ,05)	,71** (-,340; ,05)	,71** (-,332; ,05)	,71** (-,341; ,05)	,67** (-,387; ,05)	,68* (-,379; ,15)	,67** (-,399; ,05)	,67** (-,391; ,05)
Age: 17-25	1,53** (,428; ,08)	1,60** (,472; ,10)		1,38** (,329; ,11)	1,40** (,342; ,11)	1,71+ (,541; ,30)	1,34** (,297; ,11)	
Age: 26-35	1,81** (,594; ,06)	1,61** (,476; ,07)		1,52** (,421; ,07)	1,43** (,359; ,07)	1,33 (,286; ,20)	1,33** (,286; ,07)	
Age: 36-45	1,43** (,359; ,06)	1,34** (,293; ,06)		1,31** (,274; ,06)	1,25** (,223; ,07)	1,39 (,334; ,20)	1,20** (,185; ,07)	
Higher education°		1,89** (,637; ,07)	2,00** (,697; ,07)	1,89** (,640; ,07)	1,84** (,610; ,07)	1,60* (,473; ,22)	1,88** (,632; ,07)	1,96** (,677; ,07)
Secondary education°		1,78** (,581; ,06)	1,93** (,662; ,06)	1,81** (,594; ,06)	1,81** (,596; ,06)	1,73* (,473; ,22)	1,82** (,602; ,06)	1,91** (,649; ,06)
Less than one year tenure°			1,40** (,337; ,07)	1,24** (,219; ,08)				
2-5 years tenure°			1,23** (,211; ,06)	1,11 (,105; ,07)				
Fixed-term job					1,24* (,220; ,10)	,78 (-,240; ,28)	1,19 (,174; 10)	1,26* (,234; ,10)
Self-employed					,35** (-1,02; ,09)	,27** (-1,31; ,42)	,34** (-1,05; ,10)	,33** (-1,09; ,10)
On-the-job training						,86 (1) (-,146; ,20)		
Job Change 1 (Better job)°							1,17+ (,161; ,08)	1,26** (,236; ,08)
Job Change 2 (Lay Off / End of C)							1,24** (,218; ,07)	1,32** (,279; ,07)
Job Change 3 (Other reasons) °							1,33** (,285; ,08)	1,37** (,321; ,08)
Constant	,82	,58	,65	,56	,70	,99	,65	,72
N	6310	5959	5959	5959	5671	761	5663	5663
LR Chi-square	113,89	228,80	201,54	236,30	327,90	25,57	346,01	329,93
DF	4	6	5	8	8	9	11	8
Pseudo R^2 (Nagelkerke)	,02	,05	,04	,05	,07	,04	,07	,07
% Correctly classified	55,3%	58,2%	58,6%	58,1%	59,4%	61,5%	59,8%	59,8%

Notes: p<0,01=**; p<0,05=*; p<0,10=+.

(1) Information on training provided by the employer is missing for France in this wave. For this reason, and just for this model, it has been replaced by a different variable, formed from the var. PT017 of the ECHP. In the following models, training is omitted.

º Reference categories: education=elementary; tenure=more than 5 years; type of contract=indefinite; job change=non-movers; age= 46 years old or more.

TABLE A5. Determinants of perception of over-education in ITALY (1995)

Dependent variable is 1 (yes) and 0 (no)
Entries are odds ratios (coefficients and standard errors in brackets)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Female	,84** (-,166; ,04)	,76** (-,273; ,05)	,77** (-,256; ,05)	,76** (-,274; ,05)	,73* (-,303; ,05)	,75** (-,288; ,06)	,75** (-,281; ,06)	,77** (-,261; ,06)
Age: 17-25	1,49** (,400; ,08)	1,39** (,331; ,08)		1,29** (,259; ,09)	1,30** (,266; ,09)	1,35** (,302; ,10)	1,29* (,256; ,10)	
Age: 26-35	1,78** (,577; ,06)	1,53** (,427; ,06)		1,49** (,400; ,06)	1,46** (,384; ,06)	1,44** (,369; ,07)	1,33** (,285; ,07)	
Age: 36-45	1,58** (,459; ,06)	1,35** (,302; ,06)		1,34** (,295; ,06)	1,33** (,291; ,06)	1,38** (,324; ,07)	1,32** (,279; ,07)	
Higher education°		3,79** (1,33; ,08)	3,85** (1,35; ,08)	3,79** (1,33; ,08)	3,67** (1,30; ,08)	3,50** (1,25; ,10)	3,65** (1,29; ,10)	3,68** (1,30; ,10)
Secondary education°		2,45** (,899; ,05)	2,58** (,950; ,05)	2,46** (,901; ,05)	2,37** (,863; ,05)	2,32** (,841; ,06)	2,37** (,866; ,06)	2,47** (,906; ,06)
Less than one year tenure°			1,25** (,226; ,07)	1,14+ (,132; ,08)				
2-5 years tenure°			1,16** (,153; ,06)	1,03 (,038; ,07)				
Fixed-term job					1,13 (,130; ,09)	1,17+ (,161; ,09)	1,12 (,120; ,09)	1,14 (,135; ,09)
Self-employed					,74** (-,291; ,05)			
On-the-job training						1,44** (,366; ,08)	1,45** (,373; ,08)	1,42** (,356; ,08)
Job Change 1 (Better job)°							1,26** (,238; ,08)	1,37** (,318; ,08)
Job Change 2 (Lay Off / End of C)							1,25* (,230; ,09)	1,33** (,288; ,09)
Job Change 3 (Other reasons) °							1,26* (,234; ,10)	1,33** (,286; ,09)
Constant	,77	,54	,63	,53	,60	,57	,54	,62
N	7443	7326	7326	7326	7087	5290	5290	5290
LR Chi-square	112,92	536,81	499,75	539,54	530,69	367,52	381,30	363,48
DF	4	6	5	8	8	8	11	8
Pseudo R^2 (Nagelkerke)	,02	,09	,08	,09	,09	,09	,09	,08

% Correctly classified	55,2%	62,2%	62,2%	62,2%	62,2%	62,6%	62,6%	62,1%

Notes: p<0,01=**; p<0,05=*; p<0,10=+.

º Reference categories: education=elementary; tenure=more than 5 years; type of contract=indefinite; job change=non-movers; age= 46 years old or more.

TABLE A6. Determinants of perception of over-education in SPAIN (1995)

Dependent variable is 1 (yes) and 0 (no)
Entries are odds ratios (coefficients and standard errors in brackets)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Female	1,01 (,012; ,05)	,87* (-,136; ,06)	,86* (-,144; ,06)	,85* (-,152; ,06)	,84** (-,174; ,06)	,94 (-,062; ,06)	,93 (-,071; ,06)	,95 (-,043; ,06)
Age: 17-25	2,24** (,809; ,08)	2,00** (,694; ,09)		1,37** (,318; ,10)	1,63** (,493; ,10)	1,75** (,561; ,11)	1,77** (,575; ,112)	
Age: 26-35	2,49** (,915; ,07)	1,91** (,647; ,07)		1,62** (,486; ,08)	1,71** (,536; ,07)	1,89** (,639; ,08)	1,79** (,583; ,09)	
Age: 36-45	1,68** (,521; ,07)	1,34** (,298; ,07)		1,28** (,247; ,07)	1,30** (,264; ,07)	1,38** (,322; ,08)	1,33** (,289; ,08)	
Higher education°		3,39** (1,22; ,06)	3,98** (1,38; ,06)	3,70** (1,30; ,07)	3,50** (1,22; ,07)	3,23** (1,17; ,08)	3,40** (1,22; ,08)	3,67** (1,30; ,08)
Secondary education°		3,06** (1,12; ,07)	3,56** (1,27; ,07)	3,27** (1,18; ,07)	3,15** (1,14; ,07)	2,84** (1,04; ,08)	2,92** (1,07; ,08)	3,27** (1,18; ,08)
Less than one year tenure°			2,24** (,808; ,06)	1,95** (,670; ,07)				
2-5 years tenure°			1,16* (,152; ,07)	1,00 (,008; 08)				
Fixed-term job					1,37** (,317; ,07)	1,36** (,309; ,07)	1,19* (,175; ,08)	1,35** (,307; ,07)
Self-employed					,77** (-,249; ,07)			
On-the-job training						1,13+ (,127; ,07)	1,14+ (,139; ,07)	1,13+ (,129; ,07)
Job Change 1 (Better job)°							1,06 (,059; ,09)	1,20* (,186; ,09)
Job Change 2 (Lay Off / End of C)							1,40** (,339; ,08)	1,52** (,422; ,08)
Job Change 3 (Other reasons) °							1,46** (,381; ,12)	1,54** (,437; ,12)
Constant	,59	,43	,46	,39	,44	,40	,37	,46
N	5886	5886	5886	5886	5746	4460	4458	4458
LR Chi-square	195,61	640,44	695,96	733,33	673,37	460,83	481,55	434,38
DF	4	6	5	8	8	8	11	8
Pseudo R^2 (Nagelkerke)	,04	,13	,14	,15	,14	,13	,13	,12
% Correctly classified	57,4%	64,8%	65,1%	65,6%	65,1%	64,5%	64,4%	63,9%

Notes: p<0,01=**; p<0,05=*; p<0,10=+.
º Reference categories: education=elementary; tenure=more than 5 years; type of contract=indefinite; job change=non-movers; age= 46 years old or more.