GENDER AND THE LABOUR MARKET OUTCOMES OF THE UNIVERSITY POPULATION IN CATALONIA

A QU
Agència
per a la Qualitat
del Sistema Universitari
de **Catalunya**

Quality, the assurance of improvement.

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SUMMARY

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FOREWARD

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It makes very little sense to talk about quality without any measureable variables. If we have no idea of what we have and there are no benchmarks, it will be difficult to know which direction to go in and even more so to improve things.

One of the opinions that has penetrated most profoundly in the collective thinking, and which regretfully is still fostered in certain sectors, is that "public universities are a factory of unemployment". Is this assertion true?

In 2001 a first joint survey on the employment (labour market) outcomes of graduates from Catalan universities was carried out by AQU Catalunya and the seven public universities in Catalonia (University of Barcelona, Autonomous University of Barcelona, the Technical University of Catalonia [Universitat Politècnica de Catalunya/UPC], Pompeu Fabra University, University of Girona, University of Lleida and Rovira i Virgili University), in order to establish, amongst other things, the time, quality and pathways of graduate employment, together with the degree of graduate satisfaction with their university studies.

This pioneer project, which was carried out in an inclusive way for the very first time, involved the harmonisation of studies on graduate employment that Catalan universities had been carrying out separately. The purpose of this ambitious project was to be able to compare and integrate the information in order to draw reliable conclusions within the context of Catalonia.

Given the importance of the data provided by the survey, the decision was made to carry out further surveys on a three-year basis (2001, 2005 and 2008) in order for records to be kept and for trends in the entry into work of graduates to be followed and analysed.

The question I ask above can be answered from the figures that are available. According to the most recent graduate labour market outcomes survey in 2008, 93.5% of respondents were employed three years after graduation, 88% of which were full-time employed, with only 3% of all graduates being unemployed.

The current economic situation will probably have altered the employment situation of the university graduate population, and the fourth survey to be carried out next year will show the degree to which this is so. Nonetheless, the reflection that I wanted to introduce in this presentation is that, if we are not capable of measuring and subsequently analysing in a rigorous way the available information, it will be difficult for us to make the decisions that are most appropriate.

On the basis of the data obtained in the survey, AQU Catalunya presents three studies. The first analyses the relationship between family status, academic background and professional employment; the second makes an in-depth examination of university undergraduate studies in relation to the needs of the labour market (degree-job match); and the third, which was undertaken with the collaboration of the Catalan Institute for Women, deals with the quality of labour market outcomes in relation to gender, and puts forward an explanatory model for entry into work and employment for female graduates. All three studies are based on reliable data and give a perspective based on the actual situation in each case.

I am very grateful to the social councils of the public universities in Catalonia, the University of Vic and the Open University of Catalonia (UOC) for giving impetus, together with the Agency, to the carrying out of the three-year survey on graduate employment and labour market outcomes. The project is one of broad scope and will have an important impact in terms of the higher education system in Catalonia. I would lastly like to express our gratitude to the researchers and technical staff who participated in carrying out the three studies. Without the contributions made by research, there is no innovation or growth in a country. And with no figures or data, one is just another person with an opinion.

Joaquim Prats Cuevas

President, AQU Catalunya

PROLOGUE

PROLOGUE

Studies on graduate employment and labour market outcomes provide university institutions with a large number of indicators with which to improve course planning, curriculum design and student guidance systems.

Aside from the use of descriptive indicators on graduate employment for quality enhancement in the universities, studies on graduate labour market outcomes – at the system scale – enable important issues that are beyond the scope of an individual university institution to be dealt with, such as a more in-depth approach to issues of particular interest regarding the entry into work of graduates. It is for this reason that AQU Catalunya, aside from releasing the results of the graduate labour market outcomes studies, makes the databases available to social researchers to obtain a broader understanding of the key aspects of graduate labour market outcomes.

A very large sample is necessary for the employment outcomes database to provide useful information in terms of different degree programmes. With information now available on three different cohorts of graduates in Catalonia, each one covering more than 10,000 graduates, the available database is probably one of the largest in Europe and is of very particular interest for research on the entry into work of graduates.

With the encouragement of the social councils of the Catalan public universities, AQU Catalunya has made these results available to the scientific community and commissioned various studies on particular aspects of the transition by graduates from university to the labour market.

With three labour market outcomes surveys – carried out in 2001, 2005 and 2008 – and more than a dozen research projects by different groups in Catalan universities, the corpus of knowledge on the transition to the labour market is already quite considerable. The three new studies in the AQU Higher Education and Graduate Employment collection deal with three matters of great importance and interest for Catalan society: equity in labour market outcomes according to social origin, the influence of gender (gender equality) and the relationship between undergraduate studies and the labour market (education-job match).

The study on *Catalan universities as a factor of equity and professional mobility*, carried out by Dr. Jordi Planas and Dr. Sandra Fachelli from the Department of Sociology at the Autonomous University of Barcelona (UAB), focuses on the analysis of equal opportunities in the student body according to gender, regarding access, learning outcomes and job prospects. The study also analyses the impact of previous studies on academic performance and employment outcomes.

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The study shows that Catalan universities have an important social function concerning equity and the occupational mobility of young people. In particular, it shows the important role played by the public universities outside of the Barcelona area in establishing this equity. According to the authors, these universities have played a key role in the democratisation of study at university in Catalonia.

The study titled *The match between university education and graduate labour market outcomes (education-job match)*, by Dr. Enric Corominas (Department of Pedagogy), Dr. Carme Saurina (Department of Economics) and Dr. Esperança Villar (Department of Psychology), all three at the University of Girona, makes a joint analysis, for the first time in Catalonia, of the three surveys carried out so far of the labour market outcomes of the university graduate population and, amongst other issues, assesses the match between undergraduate studies and the situation in the labour market (education-job match) and the change in trends in the period between the first (2001) and third (2008) surveys.

Despite the fact that the graduate population has a sufficient level of knowledge and understanding to cope with the demands of the labour market, the results show that the transformation towards a generic skills and job-based learning model is still at a very early stage. Although the cohorts analysed in the study correspond to pre-Bologna programmes, the level of change shows that the indicators of learning deficit detected in these graduate employment studies have not been used to introduce changes in teaching methodologies. Studies of graduates from degree programmes that have been adapted and brought in line with the EHEA are now needed to see the effect of the regulatory changes on the learning models.

The third study, on *Gender and the labour market outcomes of the university population in Catalonia*, which was carried out by the Agency's staff with support from the Catalan Institute for Women (*Institut Català de les Dones*), analyses the differences between male and female graduates, the results of which are somewhat surprising: having accounted for the effect of different degree programmes, there were no significant differences between male and female graduates three years after having completed their studies. There are two reasons that explain this phenomenon: firstly, the fact that a control was made of the effect of the level and type of studies on graduate labour market outcomes, which is not usually done in gender research; and, secondly, it is likely that phenomena like the glass ceiling and salary discrimination have still not had time to appear.

The variable that continues to have most weight in terms of the quality of employment outcomes is the degree studied. It is therefore important for continuous efforts to be made to break with stereotypes and models of masculinity and femininity that, in the present day, have a strong effect on the pathways chosen made by male and female students in higher education, and subsequently in their professional careers.

All three studies cover new ground regarding the entry into the labour market of the population of graduates from Catalan universities. AQU Catalunya intends to continue to support the analysis of the extraordinary information made available through these surveys and, in collaboration with the Catalan universities, to increase the database with new samples to enable ongoing developments and trends to be analysed and forecasted.

It is for the higher education authorities in Catalonia to use this information and knowledge as the focus of their policies and strategies.

Josep Anton Ferré Vidal

Director, AQU Catalunya

INTRODUCTION

INTRODUCTION

The present study coordinated by AQU Catalunya is the result of analysis of the database from the third study of labour insertion of the university collective. Research on labour insertion at Catalan universities is the result of the interest of social councils in obtaining data and references on the quality of the labour insertion of their graduates. These studies have been carried out with a triennially since 2001, and the target population was polled three years after graduating.

This research hopes to contribute to the knowledge on the process of labour insertion of the university collective from the gender perspective in the following ways:

■ First of all, this study attempts to place the base of a theoretical framework on employment transition for university men and women, allowing to guide and to set future research within a context. We, the people who took part in this research group, are convinced not having these theoretical references implies making severe mistakes in the methodological approach. This can lead to slanted and erroneous conclusions such as ignoring the influence of the typology of degrees in regard to insertion, which joined to the fact that men and women are not homogeneously represented in the different degree group may lead to irrational conclusions. Chapters 1 and 2 represent our efforts to set the theoretical framework within a context, because of the lack of a specific theoretical framework for women, and also the need to bring the implications of the existing theoretical frameworks together in regard to gender.

■ Second, the study proposes and tests a range of indicators which analyze the quality of the labour insertion. The descriptive analysis in chapter 4 allows for the appraisal of the quality of the insertion of both women and men based on eleven specific indicators, and the analysis possible differences by gender. This analysis breaks some of the myths on gender differences, although it is important to be aware that we are analyzing a collective that graduated only three years ago. This chapter ends with a graphic summary of the behavior of the quality indicators by the typology of degrees; we believe that this diagram of indicators will be a useful tool for professional career advisors.

■ Finally, in Chapter 5 we propose, for the first time, an explanatory model of the quality in the labour insertion for female university graduates. The goal of making an explanatory approach exclusively for women is to avoid the comparative approaches that use men as a standard reference. Therefore what we try to explain in this study is why some women have better job placements than others.

The research naturally includes a corresponding chapter on methodology (Chapter 3) and a section on conclusions where the main results of each of these chapters are collected. Some specific guidelines and policies for the improvement of the transition process to the labour market are discussed.

We hope that these conclusions have as much interest for you as they do for us.

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AGENTS AND SCENARIO IN RELATION TO HIGHER EDUCATION AND EMPLOYMENT

1. AGENTS AND SCENARIO IN RELATION TO HIGHER EDUCATION AND EMPLOYMENT

1.1 Introduction

In this first chapter of the report we explain the context in which the interaction between the university graduates and the labour market occurs. The content aim is, on the one hand, to set the theoretical proposal that we find in other research approaches related to our project and, on the other hand, to establish a referent that facilitates the interpretation of the results and this interpretation is established in this report.

In Spain, at the end of the last decade and without a special theoretical debate, several types of studies started taking shape whose main concern was "to know the work situation of specific graduate collectives", with the aim of following-up the insertion of university graduates in a determinate career. A good part of these studies came from university initiatives and social councils or, sometimes, from other agents. But the majority of studies that, in an extensive way, have approached the subject have appeared in this first decade of the XXI century.

From an economic perspective (of education economy, we could suggest), that several "structural" analyses are carried out, mainly from the data bases generated by the survey of active population (EPA) that periodically carries out the National Institute of Statistics (INE), in which it focuses on the factors associated with the university demand or to the relationships between sociodemographic factors and the work situation.

The concern with the subject, from the implication of university institutions, is manifested in the compilation collected in the portal on labour insertion of the university graduates, which is an ANECA[1] initiative, and especially in the studies carried out in the Catalan public university system with the support of the social councils of their universities and directed from AQU Catalunya. The follow-up of three cohorts of graduates along the decades (1998, 2001 and 2004), with samples, each one, of more than ten thousands graduates, and through a period of post graduation interval of three years, has caused studies of diverse nature (Rodríguez Espinar, 2003; Serra Ramoneda, 2007).

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[1] <http://www.insercionlaboral.net>

Although in the analysis, gender has always been present, few are the studies that have given a special attention to the specific work situation of the university woman or, when it has been like this, the limitation of population and the samples have diminished the power of generalization of the results[2] or some reference populations[3] have not been represented in the samples.

The objectives of the research that we present herein, and also its methodological characteristics, are in a wide way portrayed in chapter 3 of this report. We can affirm that, with this work, AQU Catalunya moves one step forward in achieving the goal "of going beyond" a simple description of the work situation of the graduate collective of the public Catalan universities[4] or of the analysis, from the prospect of the graduate, from the access factors to the employment, as well as of the appraisal of its competence development and of the possible imbalances of this development in relation to the job demands PRADES, RODRÍGUEZ ESPINAR, 2007; RODRÍGUEZ ESPINAR, 2009; RODRÍGUEZ ESPINAR et al., 2010).

The purpose of these two first chapters is to present several theories that approach the relationship between education and work and that attempt to give answer to certain questions that are the basis for the explanation of this relationship: which factors have an influence on the access to an employment?

As mentioned in Rodríguez Moreno (2008), the answers to questions as the following ones will allow us to identify the most influential factors in the access to an employment:

- *Which* factors contribute and *how* they contribute to explaining the situation in the qualified job market of a promotion of university students?

- Can we say that a person has more probabilities than another of obtaining a job?

- Depending on which variables? And if it is like this, what can be made to improve the possibilities to attain a professional position?

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[2] A recent and interesting work is the one coordinated by B. González García, *Acceso al mercado laboral de las tituladas superiores en España: empleabilidad y cualificación* (Madrid: 2008). Sponsored and edited by the Instituto de la Mujer, from the Ministry of Equality, analyses in detail the job situation, but of a sample of only 800 graduates.

[3] The REFLEX project has a special consideration of European amplitude and in which 48 Spanish universities took part, although its methodological characteristics, regarding the Spanish sample, it shows significant deficiencies. From here the relativity of its conclusions and, therefore, of the utility for this work. The executive report can be obtained at <http://www.aneca.es/media/158162/InformeejecutivoANECA_jornadasREFLEXV20.pdf>.

[4] Currently this information can be accessed at <http://www.aqu.cat>.

When we appraise the access to the labour market, we have to consider the converge, on one side, the person who searches for a job, with its elections, planning strategies and of job search, and, on the other side, the selection processes of the labour market. Therefore, there is not one only determining factor that explains the obtaining or not of a job, but a set of factors that interact between themselves: personal factors (academic curriculum, personal characteristics, family context...) and social factors (job situation). It is necessary to bear in mind that our capacity will have limits on the part of the job context, but also possibilities and, therefore, it is very important to know how these forces interact.

1.2   A new scenario

It is evident that the insertion in the labour market of a person with higher education studies has one only reality, a micro context or stage where the person who searches for a job and the one that hires coincide. It is the immediate stage of the insertion behaviour in which the individual variables act, beyond its academic-professional credentials (attitudes, aspirations and labour market expectations), its strategies, and its recruitment (ways of job offer) and selection (criteria and factors of recruitment) by the companies that search graduates. This level can be of interest to the professional orientators, for example. Each person is a unique case and, therefore, a specific reference mark of the set of variables that contribute to increase the possibilities to access a job in a context of graduates in similar conditions.

However, to be able to place the individual micro contexts correctly, it is very convenient to have a more extense frame of reference, the macro context, in which the whole of the factors that can affect an extense contingent of the university graduate population is collected and that explain the variations in the demand of this collective in a determinate time and geographical context; that is, the objective conditions (sociostructural factors) that facilitate or interfere the access to a job of the Catalan graduates (for example, the volume and characteristics of the collective and the situation of the labour market). The work of Moreau and Leathwood (2006) manifest the relevance of establishing the characteristics of the two agents implicated in this relationship: the system of higher education and the labour market.

1.2.1   Students in the higher education system

We can affirm that, in the period included between the last decade of the 20th century and the first decade of the 21st century, the Mass Higher Education has been imposed. Multiple structural reforms, mainly in the European systems, like for example the elimination of the dual systems or the opening of the access policies, have allowed to attain figures like the ones that we collect in this chapter.

Another different subject is the equity situation in each of the systems. As the studies by Archer et al (2003) point out, although a diversification has been given in the social origin of the students, the medium class is over-represented in a large portion of the systems.[5]

a) University access

In a few years the Spanish university has gone from being an elite institution to being a "mass university". In this context, it seems reasonable to suppose that the expansion of the higher education has to facilitate the access to people of lower socioeconomic level. However, this fact does not always improve the social equity because, sometimes, it disproportionately benefits the higher social classes (HEATH, 2000; MACHIN, VIGNOLES, 2004; McCOWAN, 2007). Consequently, it is important to analyze in which measure this significant growth of the participation in the Spanish higher education has arrived to all the social, cultural and economic groups.

Different studies carried out in Spain in this last decade (ALBERT, 2000; PETRONGOLO, SAN SEGUNDO, 2002; RAHOMA, 2009) have shown the influence of the social and family variables in the access and choice of their university studies. Some of the most unanimous and relevant conclusions are:

■ The variables that explain the demand for higher education in a more convincing and stable way during the observed period are the variables that are not related with personal and family characteristics, while the variables of job expectations seem non influential, but influence a process of disarrangement between the demand of higher education and the needs of qualifications of the labour market.

■ The demand of women in higher education has continuously increased in during this period. The women's probability of access to the university is 10% higher than men, while in other aspects, they remain the same.[6]

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[5] Martin Trow (1973) characterized the systems of the mass higher education:

■ Access became a right more than a privilege.

■ The higher education functions took more care of the transmission of skills and of the preparation for an extense range of technical and economic roles.

■ Curriculum became more modular, flexible and semistructured.

■ Institutions became more diverse ("cities of intellect" with resident and itinerant students).

■ Selection became meritocratic, with compensatory programs to achieve the equality of opportunities.

■ Regarding the education of parents, the influence when having a university degree is higher for women than for men. For example, if the father has a higher education degree, the probability of having university studies increases 20% for women and only 15% for men.

■ The father's education has a greater influence on educational decisions for men, while the mother's education effect is greater for women.

■ To have parents with low education levels is a cultural barrier in the assistance to university.

■ Regarding the work status of the father, to have a father who is a manager increases the probability of school assistance, while to have a father who is a qualified worker, a non-specialized worked or unemployed reduces this probability.

■ A higher percentage of wage-earning and unemployed people in the family reduce this probability.

■ The students of secondary school base their decisions on the post-compulsory education in the local unemployment rates. For example, an increase in the youth unemployment increases school enrolments, due to the reduction in the cost of educational opportunities. However, an increase in the rate of global unemployment reduces the proportion of enrolments, to the extent that it transmits more pessimistic job perspectives for the future.

■ The relationship between enrolment and adult unemployment rates can reflect the effect of the budget limitations in areas of high unemployment.

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[6] As Rahoma (2009) points out, several factors can be mentioned that can contribute to the differences of gender in the educational investments that the parents make for their children. It is worthwhile to highlighting some of the conclusions that derive from the documental revision carried out in the developing countries:

■ Since job opportunities for women are seriously restricted, the returns of education are higher for men than for women, which induces parents to provide more schooling to sons than to daughters.

■ The cost of opportunity to send daughters to school is higher than for sons, since women are traditionally responsibles for taking care of small children, picking up wood, providing water, raising livestock and harvesting agricultural products.

■ The family affiliation of a woman changes from the father towards the husband when she marries. Thus, the parents consider education like a cost rather than like an investment.

■ The Muslim culture fosters to protect young girls from their exposure to men at puberty. Thus, the lack of schools for girls can be an important dissuasion to the continuity of girls in the postcompulsory schooling.

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The previous conclusions bring to light the undoubted importance that the active policies of access to the higher education have; policies that have to work in the compulsory stages of the educational system, in order to reduce the impact that structural sociological factors of the family have on the probability and the access to the following educational level. As we previously distinguished, the equity in the access to the higher education is not an immediate consequence of the equality of opportunities; this is a necessary but not sufficient condition.

b) The evolution of the university students cohort

Data of table 1.1 shows the impact not only of the demographic trend towards Spain, but also of the "re-orientation" in the choice of studies. Thus, in the period of eight courses that the data includes, we observe:

■ A decline of 9% of the total of university students in the period between 1998-1999 and 2006.

■ The decline is more significant in Experimental Sciences (28.8%), Humanities (18.2%) and Social Sciences (13.5%).

■ There are light increases in Health Sciences (2%) and Engineerings (2%).

Given the nature of the research, it seems logic to ask about the situation of woman in this stage. Firstly, we must point out that, in the period analysed, the participation of woman has increased in 1 point (from 53.29% to 54.25%) in the total of the population of university students in Spain. It is interesting to observe that, compared to the 1 point decline in the participation in Humanities, there has been an increase of 5 points in the participation in Experimental Sciences (if the decline in this branch is of 34.8% for men, it is only of 19.2% for women), 3 points in Health Sciences (which means an increase of 6.6% of the total of women that they enrol themselves in this branch), 2 points in Social Sciences and 1 point in Engineering. In the case of the technical degrees and for the same period, an increase of 5,851 in female enrolment is given, which represents an increase in the period of 6%.Therefore, we can affirm that a certain re-orientation is observed in the choice of studies on the part of women.

Table 1.1 | Evolution in the number of university students enrolled in different knowledge area[7]

	Academic year							
	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
Total number in both genders								
Humanities	161,487	161,999	156,638	149,927	144,110	143,399	136,909	132,119
Social and Juridical Sciences	801,400	794,110	767,215	749,323	728,473	716,231	694,206	693,369
Experimental Sciences	129,844	127,728	122,198	115,275	109,724	104,939	100,286	95,853
Health Sciences	118,159	120,455	121,038	119,543	119,839	119,921	120,137	121,087
Engineering and Architecture	369,268	382,763	387,883	392,839	401,521	395,559	384,157	376,217
All degrees	**1,580,158**	**1,587,055**	**1,554,972**	**1,526,907**	**1,503,667**	**1,480,049**	**1,435,695**	**1,418,645**
Women's percentage								
Humanities	63.56	63.17	63.56	63.27	63.08	64.53	63.06	62.64
Social and Juridical Sciences	60.85	61.08	61.38	62.04	62.29	63.25	62.93	63.07
Experimental Sciences	54.20	55.14	56.25	57.73	58.44	59.34	59.31	59.29
Health Sciences	71.36	71.63	72.06	73.17	73.77	74.26	74.48	74.20
Engineering and Architecture	26.27	26.46	26.82	26.95	27.30	28.08	27.42	27.34
All degrees	**53.29**	**53.27**	**53.41**	**53.68**	**53.66**	**54.59**	**54.15**	**54.25**

Source: González García (2008, 42).

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[7] In the 2006-2007 academic year, according to the university statistics from the Ministry of Education (2009), 1,410,440 students enroled themselves in non-postgraduates university studies. 48% enroled in careers in the area of Social Sciences, 25.4% in careers in the Technical area and only 6.4% in Experimental Sciences. The decline in the decade between 1996-1997 and 2006-2007 was of 8.9%.

In course 2007-2008 1,396,607 students enrolled themselves in university studies of first and second cycle, figure that meant 1.0 % less that the previous academic year. Of this total of students, 758,486 were women, 54.3% from the total.

c) The situation in Catalonia

Table 1.2 | Evolution of university students in Catalonia

Knowledge area	Course 2002-2003*			Course 2007-2008		
	Women	Men	Total	Women	Men	Total
Humanities	13,516	6,970	20,486	11,261	5,871	17,132
Social Sciences	42,002	22,443	64,445	40,809	21,954	62,763
Experimental Sciences	7,880	5,357	13,237	7,074	5,153	12,227
Health Sciences	9,061	2,842	11,903	10,211	3,057	13,268
Technical area	10,220	31,380	41,600	9,342	27,908	37,250
Sports Management and Practice	-	-	-	76	243	319
Total	**82,679**	**68,992**	**151,671**	**78,773**	**64,186**	**142,959**

* Data from the University of Vic is not included

In Catalonia, during the last quinquennium (2002-2003 to 2007-2008) a general decline of students of 5.7%, with an equivalent repercussion in men and women. However, if we notice the different disciplinary subareas, we observe that:

- In Humanities and Social Sciences the decline is equal in men and women, although in the total of Humanities it is of 16.7% and only 2.9% in Social Sciences.

- In Experimental Sciences the total decline is of 7.6%, but with a greater repercussion in women (11.4%) than in men (3.8%).

- In Health Sciences the increase is of 11.5%, higher in women (11.7%) than in men (7.6%).

- In Engineering/Architecture the global decline is significant (10.5%), but lower in women (8.6%) than in men (10.8%).

The previous data, together with what we presented on the volume of graduates in the last cohorts and also with the "stock" of population with university studies, show a not excessively optimistic panorama in a period in which the challenges of a "new economy" have to be faced.

Table 1.3 | **Percentual distribution (*) of students by knowledge area and by autonomous community**

	Humanities	Social and Jur. Sciences	Experimental Sciences	Health Sciences	Engineering/ Architecture
Catalonia	9.9	44.2	6.8	10.3	26.0
Andalusia	8.6	48.0	7.5	9.7	22.9
Aragon	6.9	42.9	6.6	11.3	22.9
Valencia	8.7	42.2	6.6	10.1	30.2
Madrid	6.8	42.5	7.6	10.4	27.2
Basque Country	7.8	44.9	5.5	5.9	34.4
Total auton. comm.	**9.1**	**48.0**	**6.4**	**8.7**	**25.4**

(*) The summation of the percentages does not give 100 because two categories (double degrees and masters) are not included that, without specification of the knowledge area, they are included in the total of statistics from the Ministry of Education.

Source: *Las cifras de la educación en España. Estadísticas e indicadores* (Ministry of Education, 2009), refered to course 2006-2007.

1.2.2 Graduate population and labour market

In chapter 2 of the work of Rodríguez Moreno et al (2008) *Dels estudis universitaris al món del treball*, analyzes the framework of reference in which different factors interrelate in the transition of university to work. The space of exchange that the labour market represents determines the possibilities to obtain a job from the adjustment between the offer of graduates and the demand of people with higher education degrees. But this is a mediatised relationship by the effect of the measures and the support policies to the transition, which can, in a determinate moment, decide the demand towards one collective or another of higher education graduates.

a) Offers for Graduates

Undoubtedly, the possibilities of insertion, especially for a person who just graduated, depends on the volume of "supply"; that is, the number of students who are turned out from each university by degree and their quantitative and qualitative relationship with the demands of the labour market.

On the other hand, the magnitude of the cohorts of graduates that regularly flood the labour market is subject to the "game" of the many variables that go beyond occupational needs. The demographic factors, the level of social welfare, the offer of university studies and access requirements, and the final choices that the students make, influenced by interests and personal capacities, have to be taken into consideration.

Thus, the result of the interaction between these factors will finish configuring the volume and the characteristics of the demand of novel graduates, that will be added up and that will compete in the same labour market with people who are graduated and have experience, who are unemployed or who are searching to change jobs. Undoubtedly it would be a "frivolity" to think that this process happens in accordance with a planning of the dynamics of the job needs. The variability "intraperson" exceeds, by far, the influence of the evidence of the denominated "professional possibilities". We further examine some of this evidence.

b) Evolution of graduates by volume

The data of table 1.4 is very eloquent: there is a decline of 7.5% in the total of graduate population in Spanish universities.[8]

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[8] The difference between this data and the one in table 5 (6.6%) is a consequence of the discrepancy between the internal sources (INE) and external ones (OCDE); discrepancies that should not hapen, taking into account that the data brought by the OCDE should have the validation of the same source.

Table 1.4 | University graduate population by field of study[9]

Course	1998-1999(1)	2002-2003	2006(2)
Data on both genders			
Humanities	18,701	18,954	15,011
Social and Juridical Sciences	114,960	109,220	96,605
Experimental Sciences	34,721	14,946	12,247
Health Sciences	21,618 (1999-2000)	23,066	22,124
Technical area	34,147	43,383	41,289
Overall	**202,529**	**209,569**	**187,276**
Women's percentage			
Humanities	68.04	66.77	66.33
Social and Juridical Sciences	65.20	66.69	68.35
Experimental Sciences	66.48	60.16	65.18
Health Sciences	75.10 (1999-2000)	75.17	78.09
Technical area	27.12	28.69	29.61
Overall	**59.26**	**59.30**	**60.59**

Source: González García (2008, 51).

(1) In the course 1998-1999, Experimental Sciences and Health Sciences are shown as one group.
(2) From course 2004-2005, the INE publishes the data of the students that finish their studies in the calendar year, instead of considering, as up to that moment, the academic year.

However, the decline in the volume of graduates that is "put on the market" annually is not homogeneous. From the data of table 1.4 we can conclude that:

- The most spectacular, and worrisome decline, is in Experimental Sciences (6.8%). It goes from 34,721 to 12,247 graduated people. How will the challenges of research be approached, basis of development and innovation?

- While there are declines in Humanities (19.7%) and Social Sciences (16%), there is an increase of 20.9% in the Engineering area (Technical) and of 1% in Health

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[9] During year 2008, 184,535 students completed their university studies. Of the whole, 112,425 were women, 60.9% from the total, similar percentage to the one of the former course.

Sciences. It is not necessary to ask about the problems of lack of health related graduates. A more promising area is the increase of graduate population in the Technical area.

Regarding the situation of graduated women, the data bring to light that:

■ There is an increase of 1.4 points in the participation rate of woman in the total volume of the graduates collective in the university system.[10]

■ Although we can observe a decline of women's participation in Humanities (1.7 points) and Experimental Sciences (1.3 points), there is an increase in Social and Juridical Sciences (3 points), Health Sciences (3 points) and in Technical areas (2.5 points).

Table 1.5 highlights the singular case of Spain, as the only country which presents a decline in the volume of the groups of graduates. It is pertinent to ask if it is only the random demographic the factor "regulatory of the offer of graduates". Up to which point is it a characteristic of an economy based on the knowledge society the decline of the volume of graduates?

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[10] In other contexts, like in the United Kingdom, the trend is similar. The work of Smetherham (2006) points out that the composition of gender in the academic achievement at scale of degree, of first class, has changed in the last years, which means that at present in absolute terms more women than men obtain firsts at university in the United Kingdom. 2003-2004, 55% (13,140) of full-time students that lived in the United Kingdom that obtained firsts were women, in front of 45% (10,840) of male students (HESA, 2004).

Table 1.5 | Volume evolution of the groups of university graduates population[11]

Country	1998	2002	2007	Variation
Spain	213,829	218,884	199,767	- 6.6%
Germany	213,710	199,863	339,543	+58.9%
Denmark	12,418*	33,035	43,142	+247.4%
France	336,186	382,661	412,358	+22.7%
Finland	22,662	34,253	43,279	+91.0%
Italy	164,567	212,153	394,731	139.9%
United Kingdom	374,582	n .d.	521,487	+39.2%
USA	1,716,886	n. d.	2,279,379	+32.8%
Japan	592,156	637,168	673,641	+13.8%

* 1999

Our own elaboration. Source: OECD, *Stat Extracts*.

The decline of 7.5% of the total volume of graduates at the Spanish universities contrasts with what happened in other countries, as we can observe in the data of table 1.5.

c) Situation in Catalonia

The level of mobility of Catalan graduates is relatively low; the social and job conditions and other values of family and cultural character results in a very high percentage of labour market insertion within our territory, and, thus, the importance of our "own promotion". From the data of table 1.6, some conclusions can be extracted that show differential aspects of the trends in Catalonia:

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[11] According to the data from the Statistical Yearbook 1983 of UNESCO, the figures of university graduates from the 1980 cohort in the countries of reference were the following: Spain (76,179), Germany Federal (185,928), Finland (26,321), Italy (87,573), United Kingdom (140,735), USA (1,752,995) and Japan (577,869). The data of Spain, Federal Germany and Japan correspond to the cohort of 1979. In Spain, the cohort of 1983 (year of enactment of the university reform law) was of 78,400 graduates.

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- The global decline from the volume of the initial and final groups in the decade of analysis stands at −21%, much higher than the experienced by the total of Spain. But the decline differential between men and women is almost of 6 points (19.21 for women and 25 for men).

- The rate of participation of woman in the total of each one of the groups goes from 59% (1998-1999) to 60.8% (2007-2008).

- The decline in the total of graduated people in the Technical area is 23.8%, with a quite similar decline for women and men.

- In Experimental Sciences the decline is of 17.7%, higher in the case of men (−27.2%) than in women (−11%).

- There has even been a decline in Health Sciences (−18%), motivated, in this case, by the decrease of women (−22.6%) that is compensated by the light increase of men of 6.8%.

Table 1.6 | Volume of graduates at public Catalan universities

Area	Course 2007-2008			Course 1998-1999[12]		
	Woman	Men	Total	Woman	Men	Total
Humanities	1,626	733	2,359	2,424	1,093	3,517
Social Sciences	7,202	2,925	10,127	8,362	4,045	12,407
Experimental Sciences	1,044	602	1,646	1,173	827	2,000
Health Sciences	1,783	456	2,239	2,304	427	2,731
Technical area	1,346	3,666	5,012	1,830	4,754	6,584
Total	**13,001**	**8,382**	**21,383**	**11,146**	**16,093**	**27,239**

Our own elaboration. Source: Data UNEIX, Commissioner of Universities.

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[12] In course 1998-1999, 5,413 students graduated at Catalan private universities in the following areas: Social sciences (almost 50%), Technical area and Health Sciences. None in Experimental Sciences and they are testimonial in Humanities. Unable of having the data from the private universities from course 2007-2008, the possible trend differences have not been able to analyze.

d) The university qualification of the population

Globally, we can take into consideration "the quality" in terms of study credits, of the whole of the available human resources in a determinate geographical stage. It is true, however, that factors such as mobility and the record or not of these movements can alter "the stock" of university graduates in a determinate population. It will not take long before the data on "exits and entries" is spread and known, in terms of training expenses, interterritorial. Perhaps we get to the point in which, like in the case of footballers, it is necessary to pay training rights for the cession of graduates from a territory that exercise in another.

In table 1.7, data of two types of generally used indicators is collected as complementary when "appraising" the development potential and technological innovation of a territory: the percentage of population between 25 and 64 years of age that is a university graduate (*A*) and the number of population graduated in Science and Technology for every thousand inhabitants (*B*).

The evolution of the second indicator (*B*) during this first decade of the 21st century has been very significant in Catalonia, since it has gone from 12.9 graduates for every thousand inhabitants in year 2000 to 15.2 in 2003 and 17.6 in 2006, last year of reference. This means an increase of 37.2% in the seven years. In Spain, in contrast, although an increase during 2000 to 2003 was produced (from 9.9 to 12.6), the indicator has declined in the last three years of reference to 11.5 in year 2006 (16.2% of total increase in the period, a figure that is less than half that of Catalonia). In the euro zone the increase was of 29.3%, on going from 9.9 people graduated by every thousand inhabitants in year 2000 to 12.8 in 2006.

Table 1.7 | Population with higher education / Population with science and technology studies

	(A)[13]	(B)[14]
Catalonia	29[15]	17.6 (23.6 vs. 11.4)[16]
Spain	29	11.5 (15.7 vs. 7.1)
Germany	24	10.7
Finland	36	17.9
France	27	20.7
Italy	14	13.0
United Kingdom	32	–
UE-19	24	12.8 (17.6 vs. 7.7)

(*A*) Percentage of population, between 25 and 64 years of age, with higher education studies (CITI 5/6),[17] by territorial area.

(*B*) Number of population, between 20 and 29 years of age, graduated in mathematics, sciences and technology for every thousand inhabitants, by territorial area.

There is alarm about the problems of lack of graduate population in these areas. It is unthinkable to approach the challenges of a communication society and an economy based on the knowledge without a powerful stock of human capital with enough training in the area of science and technology. How Grahama and Smith (2005) point out, the always critical need of professionals in science and engineering, together with the continuous demographic change in the active population with university education in favour of women and minorities, results in politicians and others expressing their concern for the current and future equity and efficiency in the labour markets of science and engineering.

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[13] Sources: Institut d'Estadística de Catalunya (data from year 2007) and OCDE, *Education at a Glance 2009*. Year of reference: 2007.

[14] Source: Institut d'Estadística de Catalunya and Eurostat.Year of reference: 2006.

[15] In 2004 the percentage was of 24%.

[16] The number of graduates for every thousand inhabitants by gender (men vs. women).

[17] According to the data from the *Statistical Yearbook 1983* of UNESCO, the percentage of population of more than 25 years of age with postsecondary studies was of 3.7% and 5.7% in Spain (1970 and 1983, respectively), 4.3% in Federal Germany (1970), 11.9% in Finland (1980), 2.6% in Italy (1971), 11% in the United Kingdom (1976), 31% in USA (1979) and 14.3% in Japan (1980).

Regarding the evolution of the participation of the woman in the whole of the population with university studies, the data of table 1.8 shows the trend of increase in the number of women with higher education studies with respect to men during the last decade. Situations like the stability of the data in France or the decrease in the Japanese population are not only imputable to demographic university factors, but, maybe, to access policies or to the effects of the job situation l in the decision of studies.

Table 1.8 | Number of women for every one hundred men, both with higher education studies (levels 5-6 of the ISCED)

Country	1998	2002	2007
Spain	135.6	133.4	140.3
Denmark	128.7	138.2	134.6
France	124.6	n. d.	122.6
Finland	157.9	159.9	171.4
Italy	128.9	131.1	141.5
United Kingdom	113.7	129.5	138.7
USA	127.0	134.2	140.8
Japan	101.8	95.5	95.5

Our own elaboration. Source: Eurostat (Data Explorer).

e) Catalonia's position in the Spanish context

The data collected in *Las cifras de la educación en España. Estadísticas e indicadores* (Ministry of Education, 2009, 7), related to the course 2006-2007, show that Catalonia occupies an immediately inferior position to the average in the whole of autonomous communities regarding the percentage of the population with higher education and Ph.D.'s. In table 1.9 we offer data of some autonomous communities of reference.

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Table 1.9 | Percentage of population with higher education and Ph.D's by gender and by ages between 25-34 years of age and 25-64 years of age.

	Men		Women		Total	
	25-34	25-64	25-34	25-64	25-34	25-64
Catalonia	32.5	28.1	42.7	29.1	37.4	28.6
Andalusia	27.9	23.3	37.6	24.2	32.6	23.8
Aragon	41.1	32.8	52.2	33.7	46.4	33.3
Valencia	32.6	25.4	41.4	26.8	36.8	26.1
Madrid	43.0	39.0	50.9	37.6	46.9	38.3
Basque Country	53.9	44.6	64.1	40.4	58.8	42.5
Total*	34.2	28.5	44.0	29.5	38.9	29.0

* For the total of the State's autonomous communities, including Ceuta and Melilla.

Our own elaboration. Source: *Las cifras de la educación en España. Estadísticas e indicadores* (Ministry of Education, 2009, 7), referred to the course 2006-2007.

Unfortunately, we cannot speak about a very favourable panorama, from the point of view of potential of human resources,of the situation of Catalonia, especially with the negative data that has already been exposed and analyzed related to the enrolment trend and graduation in the areas of science and technology.

f) Graduates in mathematics, science and technology by gender

Globally, we can affirm that the collective of university women, firstly because of their access and their choice of studies and afterwards because of their performance, they are the pillar of the stock of human capital with higher training. However, in the area of science and technology the panorama is not so hopeful. Even though one of the objectives of Lisbon 2000 was to achieve the equality of gender in this type of studies, in Catalonia, and undoubtedly in Spain, this objective will not be attained. The data of tables 1.7 and 1.8 are quite eloquent.

However, in the document of reference (*Sistema d'Indicadors d'Educació de Catalunya*) and to the data facilitated by the Institute of Statistics of Catalonia, we observe that the percentage of graduated women in these disciplinary areas does not manage to pass the barrier of the third of the total of graduates. If in year 2000 it was of 31.4%, in year 2006 it had only risen up to 32.3%.

1.3.2 Employment opportunities

If in the previous section we have portrayed one of the "agents", the graduates, in this section we will approach the characterization of "the other agent", the employment offer. It is evident that the first relevant factor is the economy evolution. The concrete economic conditions condition the volume of demand and influence on the subsequent changes of the labour market. The market of the people who just graduated is the first one to be affected: when the economic situation is in phase of growth, the young promotions are the most sensitive collectives, for which the employment levels are significantly increased. When the economic cycle is inverted, this will also be the most affected collective.[18]

In contrast, and as RODRÍGUEZ MORENO et al (2008) points out, the work structure is subjected to fast changes, sometimes drastic, influenced not just by these economic variations, but also by aspects such as the technological development, that, together with processes like the globalization of the economy, they have important effects on the logics of production and the work organization, the flexibility of the labour market (that affects the forms of recruitment) and the same structuring of the work sectors and the characterization of the professions. These changes have a great influence in the employment, that is, on the characteristics of the workplace or vacancy, with respect to the working conditions and functions that have to be developed, and affect, in short, the final professionals that the company searches for.

During the last decade there has been deep changes in the labour market, in the occupational structure and, consequently, in the expectations of the working people. As Fuller (s/d),[19] points out, since the seventies, the United States have suffered a period of economic restructuring that has fundamentally changed the work environment. With the global competitiveness which is getting more connected with the skill to adapt oneself quickly to changing circumstances, the "flexibility" has been sold as the key of success, for both companies and workers. The nature of the work relations seems consequently to be changing, while making that the idealized itinerary of a linear career in an organization seems more and more

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[18] It will be interesting to contrast the insertion results obtained in the studies carried out by AQU Catalunya referents to the promotions from the last decade, characterized by a cycle of significant economic growth, with the following study, that will include a cohort confronted with the period of crisis started in 2008. See A. Serra Ramoneda (ed.), *Educació superior i treball a Catalunya: anàlisi dels factors d'inserció laboral* (Barcelona: Agència per a la Qualitat del Sistema Universitari de Catalunya, 2007).

[19] S. Fuller, *Gender, education, and job instability: exploring job mobility and Wage growth over time.* <http://www.allacademic.com//meta/p_mla_apa_research_citation/0/2/3/0/3/pages23031/p23031-1.php> (consulted on June 18, 2009).

old-fashioned (CAPPELLI, 1999; OSTERMAN, 1996). The standard work model for white man in the post-war period, of full-time work and permanent contract is eroding, since the companies try to create and destroy work fast, and the working population is forced to accept the probability of continued job changes during their professional careers.

Thus, the growth of a more" flexible" career pattern and, therefore, less stable has important implications in the future of jobs and working people. Our understanding of these implications is, however, still rudimentary. Some of the consequences in the area of the university collective graduates have been the following ones:

■ Graduates accept more probably initial jobs that do not require a degree (MEAGER, 1999) and/or jobs characterized by "non standard" forms of job (for example, non full-time jobs or not with permanent contract).

■ Competition among graduates has increased.

■ The "returns" of the higher education have become less obvious. As Brown indicates, "although the opportunities of education increase, they are being more difficult to be profitable" (2003, 149). With everything, the graduates in the United Kingdom remains in a favourable global position, in comparison with non graduates of the United Kingdom (COUPPIÉ, MANSUY, 2000) as well as of graduates in other countries of the European Union (BRENNAN et al., 2001).

Another interesting aspect to consider is the "form" that each person has of facing their relationship with the job offers. How Dubar (2001) points out based on a wide research by Trottier, Laforce and Cloutier (1998) in Quebec, that included the promotion in 1986 of 61 careers and in the interval of eight years after their graduation, four different logics of action emerge:

■ Some people were only worried about their stability, on considering that the work has a purely instrumental function ("to support my family").

■ Others wanted, especially, to be recognized, valued and judged as competent (by customers or their bosses), especially when they worked on their own.

■ Others wanted to stay in the labour market and not to drop-out of it, to be able to find jobs even for part- time jobs and of limited duration jobs ("to take part in the labour market").

■ Finally, others subordinated the job activity to a project, a passion or a domain that corresponded with their training, that had become a part of them and they could not imagine themselves dropping-out ("to work in my area").

a) Some peculiarities of the university graduates population's labour market

Nobody doubts that the typology of the economic cycle is associated with determinate global trends regarding the occupational offer; but we also have to insist that the labour market is not uniform and, therefore, the variations (related to the economic cycles and logics of production and work organization) do not affect in the same way in all the levels and strata. Certain phenomena can affect more the industry sector and, consequently, the degrees related with the mentioned sector.

Employment associated with the university academic credentials show certain singularity regarding the exclusiveness or not of their exercise: graduates of medicine, nursing or teaching compete in "own or closed markets", since their degrees are a specific requirement to occupy determinate jobs. However, there is an open labour market, represented by sectors susceptible of recruiting an extense range of professionals with different training and that is characterized because it can also open to groups of similar careers or to any university degree.

Therefore, the objective possibilities of insertion in the labour market of a determinate collective (teachers, health or biology professionals, etc) will depend on the relationship between the following variables (Rodríguez Moreno et al., 2008):

■ Amplitude of their field of work protected from the competitiveness of graduates of other degrees.

■ The competitiveness of their degree in the labour market open to similar degrees, like the case of sciences, and in the qualified labour market, where it will compete with any university graduate.

The first of the variables, the amplitude of the field of work, depends exclusively on the offer-demand law and of the adjustment between both in a determinate geographical context. It is what happens when, for example, doctors are searched, since no person who cannot prove their training can access it because the entry is, as to say, "armoured". The second, however, obeys to other variables. For example, there are many offers in the business sector (chemical, pharmaceutical, food sector...) that searches for graduates from similar areas, that is, a graduate of the science area (chemistry, pharmaceutical, biology...) that guarantees them a suitable basis of knowledge and a capacity to learn and to adapt oneself to new needs.

Finally, we have to point out that the university studies shape a heterogeneous whole regarding its orientation towards a profession: from the most general studies, such as humanities, where the students search for a job in the open labour markets and, once they obtains a job, they start their specialization, until the clearly profession targeted studies (teaching, nursing, engineering), in which the transition is produced in specific and often regulated areas, and the training of which provides a legitimation to take part in the professional community.

b) Employment level for university graduates

The result of the set of variables, situations and contexts previously mentioned, and other aspects that have not been mentioned, give as a consequence a determinate "employment situation". On table 1.10 we offer a first characterization of the population collective with university credential in a global geographical scale. If we also consider the information presented in the corresponding footnote of the page (note 20), we can state some conclusions:

■ The high activity rate of the university graduates (9 of every 10 are available to work).

■ The full incorporation of the Spanish university women in the job world. A differential of 6-8 points (according to the age range) in favour of men in the activity rate was an unthinkable situation a decade ago.

■ A quite equivalent employment rate, by gender, in comparison with other countries of our geographical environment and level of development.

■ We do observe a significant differential in the Spanish area between the employment rates of men and women: 12 points. This figure exceeds the averages of the OCDE and of the 19 countries of the EU in 2 and 4, respectively.

Table 1.10 | Employment rate (in percentage) by gender of the university graduates collective in the population between 25 and 64 years of age (year 2005)

Country	M	W	Differential
Spain[20]	90	78	12
Germany	88	79	9
Denmark	89	84	5
France	84	76	8
Finland	88	83	5
Italy	86	75	11
United Kingdom	90	83	7
USA	89	78	11
Japan	93	66	27
OCDE	89	79	10
EU-19	89	81	8

Our own elaboration. Source: Eurostat (Data Explorer).

[20] Data from year 2007 is the following:

	Activity rate		Unemployment rate	
	25-34 years	**25-64 years**	**25-34 years**	**25-64 years**
Total	90.2	88.6	6.4	4.8
Men	93.5	92.7	5.3	3.8
Women	87.5	84.7	7.3	5.9

Source: *Las cifras de la educación en España. Estadísticas e indicadores*, Ministry of Education (2009, 306).

While in men the differential of activity rate between the higher education and postsecondary education collectives is only of 2 points for the range from 25 to 34 years of age and of 2.6 points for the range of 25 to 64 years of age, in the case of women the differential attains 8 points for range from 25 to 34 years of age and 11 points for the range of 25 to 64 years of age. The differential in the unemployment rate is 3 points, independently of age, and near 1 point in the case of men.

c) Women in this scenario

The enumeration of studies and data that demonstrate the inequality of woman in the job area would be extensive. As Moreau and Leathwood (2006) point out, it is necessary to distinguish between equality of opportunities and equality of attainment (equality of opportunity and equality of outcome). A quotation of Riley (1994,13) is relevant:

> "The liberal interpretation of equality, equality of opportunity, has been concerned with ensuring that the rules of the game [...] are set out fairly. The assumption has been that rigorous administrative controls and formalized systems will ensure that fair play takes place and create the circumstances in which previously disadvantaged groups compete equally with other groups of students or employees."

Gutiérrez Esteban and Luengo González (2008), after analyzing the results of several studies MARUANI, 1998; BOURDIEU, 2000; GUSTAFSSON, 2000; GRAHAMA, SMITH, 2005; FILIPPIN, ICHINO, 2005) and beyond detecting the inequalities in the labour market, they point out the existence of an important symmetry between the social classification of job situations and the social classification based on gender. Thus, although women attain a higher average in their academic results than men, they have a higher unemployment rate. This has produced "extraordinarily qualified" women, that is, a disparity between job posts and qualifications, so that the qualified training and the job activity are not connected (GÓMEZ JIMÉNEZ, 2002; GONZÁLEZ SUÁREZ-BUSTAMANTE, 2003).

In the presentation to the European Council of Spring (8th and 9th of March 2007) of the report of the European Commission about equality between men and women, some of the data are quite eloquent:[21]

■ The Lisbon's objective is to attain a female employment of 60% in year 2010 (including part-time jobs).

■ "Women stimulate the employment growth in Europe and help us to attain our economic objectives, but a great number of obstacles still prevent them from fully asserting their potential". This declaration is from Vladimir Spidla, Commissioner for Employment, Social Affairs and Equal Opportunities.

■ In the European Union of the 25 countries, the women's employment rate reaches nowadays 56.3%, 2.7 points more than in 2000, year in which the Lisbon strategy was launched.

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[21] Délégation aux droits des femmes et à l'égalité des chances entre hommes et femmes, «Les femmes face au travail à temps partiel», Communication du Conseil Économique et Social (presented by Geneviève Bel). Year 2008, num. 5.

■ Women surpass men in respect to education (59% of the European university qualified people are women).

■ Men still win an average of 15% more than women for every hour of work.

■ The equilibrium between the professional life and the private life is a key for a greater equality between men and women:

  - The employment rate of women from 20 to 49 years of age declines 15 percentage points when they have a son or a daughter, while men's employment rate increases 6 points.

  - Women often have more part-time jobs than men. In year 2006 this job modality represented a third of women (32.9%), versus only a 7.7% of men.

In short, and how Brennan and Shah (2003) point out, the social disadvantage that age, race or social class can mean, besides being frequently mediatised by gender, and since it manifests in certain aspects of people's lives and in determinate moments, there are contextual elements that play an important role. A determinate inequality can be seen reinforced by another, and generate an interaction among several inequalities that elevates the initial level of each one of them. The same could be said of the interaction factor between several factors that act in the relationship of two present agents in the described scenario, and in which the relationship between the higher education system and the labour market takes place.

1.3 A growing concern

In the declaration of Louvain 2009 of the ministers responsible for higher education, the third of the ten distinguished priorities in higher education for the next decade is the employability of university graduates:

> "Since the labour market requires greater levels of capacity and transversal competences, higher education will have to endow students with the necessary skills and competences and with the advanced knowledge along their entire professional career. The employability empowers the individual to fully use the opportunities of the dynamic labour market..."[22]

In the European Union policy, the term *employability* was introduced in the Regulation of 1988 about the structural funds and in the related Regulation of 1988 of social background (BRINE, 2002). The employability is one of the four pillars of the European labour strategy. In many countries, the graduate's employability is a

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[22] Release from the conference of European ministers responsible for higher education, Lovaine/Louvain-la-Neuve, 28th-29th of april, 2009.

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priority in the governmental agenda, with expectations that the higher education should contribute to the national economic growth.

It can seem obvious to point out that in the contemporary history of university the "intentionality" has always been present to train for the professional career. However, we cannot say that the analysis of this training purpose has been a question of special interest, at least in the Spanish context. To know the situation of insertion in the labour market of the graduates in a determinate degree or university, or to analyze the appraisal that this collective gives to the training that they have received by "experimenting the professional accomplishment", has not been in the agenda of our institutions until the last decade of the last century.[23]

If to know the reality of the insertion in the labour market or its level of suitability and satisfaction with the received training has not been a priority aim of the university institutions, it has been even less important to design its training plans in accordance with this subject. Cuadrado Roura (2003) and García Montalvo (2001), in the preliminary explanation of adaptation to the European Higher Education Area, already indicated that the universities had to face the issue of the transition of their graduates to the labour market assuming the unavoidable relationship between training and job demands.

Undoubtedly, in the European context, the United Kingdom has been the only country that, from 1995 on, faces the subject more decisively. The master plan of strategy competences of the government of the United Kingdom points out that the global economy has extinguished the idea, to a large extent, of "having a life-time job". What is imposed now is "life-time employability" (DFES, 2003). After the recommendations of the Dearing report (NATIONAL COMMITTEE OF ENQUIRY INTO HIGHER EDUCATION, 1997), in 1999, the government of the United Kingdom introduced a performance indicator based on the graduate's employment, with results related to measure the performance of the higher education institutions (SMITH et al, 2000).

The Dearing report (NATIONAL COMMITTEE OF ENQUIRY INTO HIGHER EDUCATION, 2003) recommended that the higher education institutions immediately started to develop, for each syllabus that they offered, a "syllabus specification" that gave the foreseen results in terms of knowledge and understanding what was expected that each student had when finishing the subject: key competences, cognitive competences, subject-specific competences, etc.

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[23] Part of the studies have been carried out from the point of view of the economy of education, adopting structural approaches in the analysis of the relationship between education and work: Aguaded and Tirado (2004), González Ferreras and Wagenaar (2003), Jiménez Aguilera (2003), Cuadrado Roura (2003), Martínez Martín (2002), García Montalvo (2001) and Sáenz de Miera (2001).

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Consequently:

- Many higher education institutions have attempted to root competences in their study plans (ATLAY, HARRIS, 2000; CHAPPLE, TOLLEY, 2000; HARVEY et al., 2002).

- Companies give importance to the generic competences (like communication and team work competences) and to the personal attributes (like, for example, resistance and commitment).

- The formal credentials are a less reliable guide of success in the adaptable organizations of the post-industrial society. For some employers, a degree means nothing more than a "threshold to the requirement, besides other evidence of suitability" (PURCELL et al. 2002).

As we already mentioned (RODRÍGUEZ ESPINAR et al., 2010), although it is true that university training is recognized like a value by itself, the need that this training allows a suitable and pertinent incorporation in the job world is increasingly pointed out. The professional significance (to attain the requirements and the expectations of the professional field for which the students are prepared for) is assumed as much as the flexibility and capacity of innovation of universities to anticipate questions and requirements for the market and the new advances in the different professional fields, and to reply with speed.

However, and from the accountability demands, the employability of university graduates is considered like a significant indicator of the performance of the same institutions, although in some contexts the relevance of the mentioned indicator is discussed. Harvey et al. (2002) are critics with this indicator, in considering that it deals with personal attainment in which the institution has less responsibility. Other authors have argued that the relationship between employability and employment (potential and real) is highly measured, by structural factors of access inequalities as well as of offer (volume of graduates) and employment demand. In this direction, other authors affirm that, in a simplistic way, the employability indicator avoids the interaction that is given between labour market and social structures, as gender, race, social class or disability.

In general terms, we can affirm that the bottom line is about the theoretical debate that guides the research on the subject, of the relationship between education and work. In the following chapter we deal with the different theoretical framework, with quite enough details, that are generally adopted.

2

EXPLANATORY APPROACHES TO THE RELATIONSHIP BETWEEN EDUCATION AND WORK

2. EXPLANATORY APPROACHES TO THE RELATIONSHIP BETWEEN EDUCATION AND WORK

In this chapter we will present two main approaches on the relationship between education credentials and work, the theory of human capital and the theory of social reproduction, resulting in a proposal which we believe allows us to mesh predictions: the employability approach. Although there is no women's theoretical frame mark patent, we will expound the implications that each of these approaches has from the prospective of gender.

The theory of human capital as well as the one of social reproduction are socioeconomic approaches, centered on the macro-economic variables derived from the interaction context between the educational output and the demand of the labour market. There would be, however, a second type of approaches, which focus on the micro context of the insertion in the labour market, that is, in a stage where a person who looks for a job coincides with the one that hires. In this stage interoperate, on the one hand, the personal variables, like attitudes, aspirations and expectations of the labour market that mediatise his/her strategies when looking for a job, and, of the other one, the recruitment and selection strategies on the part of the companies that search for graduates. The employability theories enter in this second type of approaches and focus on the personal determiners of the insertion in the labour market, so they complement the two former theoretical approaches.

2.1 The theory of human capital

The theory of human capital, regarding the insertion in the labour market, defends that people "are rewarded with good jobs" in consonance with their educational credentials. The theory of human capital elevates the knowledge acquisition and competence at the level of other material components like the means of production (BECKER, 1964; SCHULTZ,[24] 1971). The theory represents the first formalized attempt to explain the role that the acquisition of skills and knowledge —through education— plays in the processes of economic development, and also its value in the attainment of an employment (FIGUERA, 1996).

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[24] Theodore W. Schultz received the Nobel prize, because his text Investment in Human Capital (1961) was considered to mark the birth of a new science: the economy of the education.

The economy statements from the theory of human capital are summarized as follows:

■ The set of qualifications, skills and certified knowledge attained through processes of ruled education and of non ruled training (training in the job placement, for example) shapes the human capital.[25] The human capital is the result of a deliberate investment, investment that allows attaining opportunities that in another way would not be assumable.

■ It establishes a positive relationship between investment in the human capital and global increase of the profits of the working people. The jobs obtained (salary, hierarchy, etc) will be in agreement with the human capital of the person who obtains them. Thus, people obtain jobs in consonance with the level of human capital.

■ It establishes a positive relationship in the national area between economic competitiveness and degree of development of the human capital of its citizenship. Consequently, the economies are seen benefited in long-term by the policies of investment in training of the human resources, since the training affects the capacity to carry out a productive job. In this sense, Schultz criticizes the theories that consider investment in human capital as a cost. Becker goes a little bit further and affirms that modern economies of the knowledge society need people with higher education. In these economies the human capital, either from formal ways of education or acquired through experience, is, from far, the most important of capital in modern economies.

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[25] The following fragment by Serra Ramoneda, in the preamble of the book *L'educació superior en el segle XXI* (AQU Catalunya, 1998, 7), allows us to see what it means to place the human capital at the level of other resources:

"If until the 18th century the land limited of production capacity, finally the Physiocrats affirmed and collected in their theoretical constructions Ricardo, Malthus and others, the saying, the so-called Industrial Revolution placed this role towards machines and all kinds of tools that allowed increasing the performance of the energy developed by human work. The richest, the most powerful, the most effective was the one who had more capital. Today the technological progress has placed the stress towards knowledge. The person, the organization or the country that has a higher know-how is the one who can get the most performance from natural factors."

2.2 The theory of social reproduction

The theories of reproduction or social exclusion (WEBER, 1968; COLLINS, 1979; PARKIN, 1979) postulate that the job obtainment and remuneration, and also the location of the person in the occupational structure, is determined by the differences of power, status and capital of these people and of their reference groups.

The postulates of the theory of social reproduction can be summarized in the following way:

■ The labour market allows to access resources and to be able that they can serve to increase the position of a group in the occupational structure at the expense of others, excluding the less powerful groups in winning access to jobs that offer a status and some high material rewards.

■ The competition for jobs and rewards and the consequent position in the occupational structure is not made on an equality basis or meritocratic, there are fundamental differences of power, status and capital of people and the social groups. The social origin is a decisive factor of differentiation: it has a filter function not just in the access to higher education, but in the professional attainments posterior to the obtaining a degree.

■ Education is an essential element of perpetuation or reproduction in an economic and social order: the school's function is to socialize students in the economic status of their progenitors and to perpetuate the *statu quo*. In the measure in which an opening of the university to weaker social strata, other mechanisms will be put into operation.[26]

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[26] Brennan i Shah (2003), in a study where they appraise the impact of policies to train graduates in employability competences reach the conclusion that this training does not have the foreseen effects in the graduates population, since the less favored classes are that ones who obtains more benefits. The authors do not attribute it on an explicit mechanism, but to the fact that students of more deprived groups, on having to work during their studies, do not have the same degree of participation in this kind of extracurricular formative activities.

2.3 The phenomenon of overeducation seen from these two theoretical frameworks

From the theory of the human capital

Each employment has a minimum competition or threshold that governs access. This threshold can be attained by different combinations between qualifications and work experience, and, therefore, for people with different levels of qualifications and work experience. The human capital or the competences to access a job can be acquired in two different ways (BÉDUWÉ, PLANAS, 2003):

■ Through a formal education characterized by its qualification.

■ Through an implicit education or job experience, where the age of the person or its seniority in the labour market has an influence.

The educational credentials and the job experience seems that could be complementary or interchangeable. Thus, even though a young person could have a high level of qualification, it could be that he was not chosen for a type of because of a lack of experience.

From this approach, the overeducation, very typical in the beginning of the professional trajectories of the university collective, it is a transitory phenomenon of people that probably will rise in the occupational scale (CORTADA, 1998; RUBB 2005). As a matter of fact, it can be a good strategy to last for some time in employments for which one is apparently overeducated, in order to acquire experience (SICHERMAN, 1991).

Moreover, there are authors that defend that overeducation can be due to other weaknesses in the human capital as, for example, low educational quality, low experience due to interruptions of degrees, less experience in jobs or other motives (RUBB, 2006).

It can happen that apparently overeducated people have low job experience; in an inverse way, the overeducated people could make up for their lack of formal education with strengths in other areas of human capital. According to Rubb (2006), the selection processes and promotion probably overestimate overeducated people (for the difficulty in estimating the weaknesses in human capital), while they underestimate the subeducated human capital (for the difficulty in evaluating their strengths). This fact puts people with less formal education in situation of disadvantage.

Overeducation not just would serve to explain or predict the occupational mobility in the same company, but it would also be an explanatory variable of the mobility between jobs. Thus, it is more probable that overeducated people consider a

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determinate job like another step in their professional career, than the subeducated or infraeducated ones. In this sense, the investment in education is a higher risk for the more qualified staff than for the less qualified people, who probably will be more permanent in their jobs (SICHERMAN, 1991).

From the theory of social reproduction

From the credencialist theories[27] the educational expansion is not produced by the demand for qualifications of the labour market, but by the competition among people to achieve social status. The pressure is so strong that the dominant groups can not totally monopolize the production system of cultural accreditations; this creates an overproduction of credentials that drives to a chronic over offer of graduates (FIGUERA, 1996). The credencialists approach would justify the overeducation (formative levels above the required ones) or the underemployment (moving people with lower formative levels from their job placements).

The operation of the recruitment processes can retire under the concept of "signal". The degree is a signal that allows separating aspirant people to a job (STIGLITZ, 1975). The degree is employed in the selection processes to legitimate a hierarchical order system on the basis of formative levels, so that the educational system becomes a free selector of workers while it stops the job conflict.

According to Collins (1979), the educational credentials are the contemporary equivalent to the professional tests. The educational credentials are the resources that allow people with higher educational levels to dominate determinate jobs through the access control of privileged jobs, and the main activity of schools is to teach concrete status cultures (ways to be, of being, vocabulary) that act as a brand of belonging to a particular group. The educational credentials determine the occupational placement and the quality of the insertion in the labour market, not for the certification of some knowledge or acquired capacities, but in the socialization of values and attitudes of class of some social groups, that, perfectly distributed in the educational itineraries depending on the social origin, will drive towards productive levels different from the capitalist industrial society.

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[27] The credencialist theories, which can be included in the theories of social reproduction, developed at the seventies, period in which the disarrangements are evident between the educational system and the labour market. The university, contrarily to the predictions of the theory of human capital, expands as the crisis is more evident. This expansion is linked to a loss of the value of the university degrees (COLLINS, 1979).

2.4 Gender phenomenon seen from the theory of human capital and the theory of social reproduction

From the theory of human capital

The overeducation approach from these theories makes people responsible, more than other structural factors (typology of employment offers), and it supposes that the labour market is "neutral", that is, that does not have preferences of class, race or gender. So, the differences that can be found among collectives - for example, between men and women - would be explained by the differences in human capital of these collectives (educational level or work experience).

Thus, it is more probable that women are more affected by the effects of the theory of human capital depreciation (MINCER et al., 1974), according to which the human capital tends to depreciate during the periods that does not take part in the labour market (for example, during the breeding of sons and daughters).[28, 29]

So, in relation to gender, the approach of human capital is meritocratic and does not foresee any type of discrimination. Salladarre et al (2007) affirm that the differences by gender regarding the temporality rates are due to characteristics such as the educational level or the sector where they work (composition effect), and that the work segregation can go through other motives than discrimination, like the differences in their human capital and productivity or the different preferences of the particular characteristics of a job or towards the flexibility in the working day. This type of theories, therefore, focuses on the differences found in the order of the individual preferences, more as a consequence of social dynamics (combine family and work life, for example).

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[28] The theory also foresees the depreciation of those attributes of human capital that are infrequently used.

[29] The substantive Law 3/2007 for the effective equality of men and women foresees, in this direction of palliating the effect of maternity leave, which concedes preference to during a year, in the award of posts to take part in the training courses, to whom has incorporated into the active service coming from the maternity or paternity permit, or has readmitted from leave situations for motives of legal guard and attention to dependent elderly people or disable people (article 60.1).

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From the theory of social reproduction

Although the theories of social reproduction, that appeared in the post-industrial period, focus on the concept of social class and did not take into account new axes of inequality like the ones provoked by the migratory phenomena, nor questioned the model of predominant gender (bread-winner model),[30] with time gender and race have been incorporated as inequality factors.

Smetherham (2005) criticizes the assumption of "neutral market" from theories of human capital affirming that there is not an objective appraisal of people's human capital depending on which they are placed in the corresponding stair of the occupational structure, but that these appraisals are associated to certain social attributes. That is, the appraisal will be influenced by the employers perception and appraise the credentials, the knowledge, the competences and the attitudes, and by how they design the processes of recruitment and selection. This model includes, therefore, the influence of social stereotypes, stereotypes that favour the reproduction and hamper the access of minoritary groups in the high placements of the occupational hierarchy.

In the theories of reproduction there are two dynamics of inequality:[31]

■ The direct one, or explicit and formal discrimination (for example, in a selection process or promotion, to discard from the beginning a collective determined by race or gender).

■ The indirect one, on apparent formal equality, but that really is a fruit of social conditions (for example, the minor presence of a collective in determinate educational areas fruit of stereotypes in professions by social gender or class).

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[30] Sociological model based on the differentiated assignment of roles and that attributes men with the role of heads of family and of main suppliers of income, and to women the role of housewives and secondary suppliers of income or non suppliers (*Recull de termes Dones i Treball*, 2007, 12).

[31] The substantial law 3/2007 for the effective equality of women and men collects this conceptual distinction:

■ Direct discrimination due to gender: discrimination that is produced when a disposition, a criterion or a practice excludes explicitly a worker due to gender.

■ Indirect discrimination due to gender: discrimination that is produced when a disposal, a criterion or a practice of apparently impartial character excludes implicitly a worker due to its gender.

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The inequalities between men and women have explained themselves, within the framework of these theories, from concepts like the followings:

■ **Glass ceiling.** Chinchilla et al. (2003) describe it as the set of non written rules or company culture that hamper the access of women to determinate jobs.

The glass ceiling is referred to situations where the promotion of a qualified person in the hierarchy of an organization stops at an inferior level because of some form of discrimination (sexism, racism, prejudice towards disabled people, etc). Although there are not explicit obstacles that exclude apparently these collectives, *de facto* they do not access, equality of competences, in the same places of power. The motives can be diverse:

- Stereotypes and preconceptions of the roles and the skills of women.

- Prejudice that women will end up acquiring certain family responsibilities and that this will have a negative effect in their performance at work. In this way, the company assigns automatically to their woman condition a "deficit of production" caused by the supposed need to reconcile work and family life.

- Exclusion of women of the informal networks.

- Lack of feminine models in high positions of the hierarchy and lack of orientation or protection.

- Slanted evaluation on the part of their superiors.

- Lacks of policies or devices that facilitate the conciliation of the personal, family and work life.

■ **Old-boy networks.** It refers to the network of contacts of work environments traditionally dominated by men. These sectors of work prejudice women's salaries, together with other aspects like the same insertion or promotion in the labour market (GRAHAMA, SMITH, 2005).

■ **Homosociality.** Trend to reward people with similar attributes (O'CONNOR, 2008). Through homosociality men "reproduce themselves in their same own image", and |their events are similar in the key attributes (gender, the managerial style or, even, the physical aspect).

■ **Concrete ceiling.**[32] Chinchilla et al. (2005) describe it like the self-imposed ceiling by personal elections, like rejecting the promotion to more rigid and demanding management placements. In this case, women "opt" not to carry out management functions because it would be incompatible with their role in the family area as the main responsible for dependent people or of the couple.

In this situation, we would find as causes the unequal distribution of the family tasks, the lack of devices to combine the family and professional life, and, according to authors like Bel (2008), ictiliological pressures that associate determinate forms of jobs (like part-time jobs), works or posts as "an ideal for women".

O'Connor (2008) detects that, even in organizations that explicitly manifest their commitment with the non discrimination, there are practices that perpetuate the inequality of gender, like for example refusing to bring up questions of gender in pro of a supposed meritocracy, to favour little clear criteria or the permissive outlines of qualification in points of critical access, to consider natural and unavoidable the highest wages of entry in some places —for example, for the teaching staff in masculine areas—, or, when in the face of the need to fulfil the law or other pressures in questions of gender, the organizations overuse the "compatible" women and underestimate those with reputation of "difficult".

2.5 Criticism of human capital and social reproduction theories

Of the human capital

The theory of human capital has been criticized from the positions of the social reproduction because:

■ Only elite will be able to have individual access to the jobs in the labour market that require an intense management of knowledge and that are highly valuable at scale.

■ They deny the veracity of the liberal affirmation that the increase of graduates demand in the post-industrial society is an answer to the need of higher level competences because jobs become more complex and technological (COLLINS, 1979).

■ The focus in the employability and the individual human capital represents an attempt to legitimize the unequal opportunities in the education and in the labour market in a time of inequalities increase (BROWN, LAUDER, 2001).

From other theoretical frameworks, the approach of human capital has also been accused of being naïve or highly idealistic, because it assumes a direct relationship between competence and reward, as if the process of obtaining of a job were, simply, an exercise from fitting in the required competences with the competences possessed in a functionalistic and technocratic way (WALBY, 2002), when, as we

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[32] In the Anglo-Saxon context, the ceiling concept makes reference to the type of barrier that the minorities of women find. Thus, the women of caucasic origin can be capable of breaking, in an eventual way, the glass ceiling, but for women comming from minorities the concrete ceiling is less handy. This concrete ceiling is due to the fact that women comming from minorities face racism as well as sexism, which intensifies the obstructions in the progression to the labour market.

have seen in chapter 1, the labour market is highly complex and segmented. These theories ignore the aspects of the graduates demand. The employment of graduates comes determined by the offer and the demand of the labour market, and not just by their capacities. Consequently, the degree of insertion in the labour market of a same proportion and typology of graduates will vary in accordance with the economic conditions (BROWN et al., 2003).

Of the social reproduction

- In a system of "mass" higher education it is getting more difficult and fearless, or impossible, that the dominant social groups use the educational credentials as a legitimate means to attain the social exclusion from the best rewarded employments in the labour market, although the access to the credentials that have a reputational value is probably still disproportionate in favour of those with elite backgrounds.

- According to this framework, the reproduction is attained only through the formal systems of education, motive for which it can be pertinent to ask oneself through which means does the dominant social groups are now attempting to replay their status (BROWN, HESKETH, 2004).

- Degrees do not necessarily load people with the necessary skills for determinate employments. It is necessary to also consider the degree in which the values of a group of a dominant status (for example, the employers) come into conflict with the values of other groups (for example, graduates), regarding competences such as leadership, team work or of communication.

- The deliberate and conscious exclusion is often the less significant element. It is more probable that the exclusion is made without being conscious and that the inclusion is deliberate as well as non-premeditated (for example, to watch over yours and to give a daughter or a son a job in family business).

The scientific evidence

Chart 2.1 collects several results of research or statistics that would support some of these two theoretical frameworks.

Chart 2.1 | Theories compared to research

The macro-economic statistics (see OCDE, 2007, 2009; MIRET, 2008; CAIXA CATALUNYA, 2009) employed in setting the stage of relationship between higher education and work in chapter 1 support the theories of human capital, in the sense that it finds a positive correlation between educational level and profits.

Research within the framework of the higher education that support the theories of social reproduction regarding the influence of social class:

- Brennan and Shah (2003).
- Moreau and Leathwood (2006).
- Gutiérrez Esteban and Luengo González (2008).

These studies would confirm that the segregation that originates in the educational system is reproduced in the productive system (COUPPIÉ, MANSUY, 2000).

In the Catalan context, Planas et al. (2009), in a recent study based on the population of the Catalan universities graduated in 2004, three years after graduating, reach the following conclusions:

- There is a relationship between the parent's educational level and the access to university.
- Differences are not observed for the social origin in the access grades, in the academic record, in the distribution by areas, or in the income and the quality of the insertion in the labour market (measured from two variables: the profits and an index that combines the job suitability, the income, the job satisfaction and the type of contract).
- There is a higher probability of occupying jobs of higher level among the graduates who have parents with a high level of employment.

The authors conclude that the universities are a factor of equity in our society, because the differences "in the access" fade "at the exit".

Research within the framework of higher education that support the theories of social reproduction regarding gender:

- On the access to the higher education and the educational segmentation by gender: Daune-Richard (1995), David et al. (2003), Berggen (2007), Absiss (2008), Rahona (2008).
- That relate gender and unemployment: Brennan and Shah (2003), Moreau and Leathwood (2006), Gutiérrez Esteban and Luengo González (2008).
- That relate gender and obtaining non qualified jobs: Moreau and Leathwood (2006).
- On the insertion in the labour market of woman in the academic context: Armenti (2004), Wolf-Wendel and Ward (2006), Aanerud et al. (2007).
- On the salary breach: Chevalier (2002, 2007), Brennan et al. (2003), Grahama et al. (2005), Moreau et al. (2006).
- Other subject matters (type of contract, job segregation, etc): Einsarsdóttir (2002), Salladarre et al. (2007), Martínez et al. (2007).

2.6 The issue of employability

In chapter 1 the ongoing issue has been set forth towards the university graduate's employability and how the policies promoted from the governments (UK skills strategy, Dearing report or European Union policies) have transformed in actions in the institutions of higher education.

Under the concept of employability it does not only conceive the possession of a series of competences required to satisfy the changing demands of the market (to maintain a job), but also the initially required ones to obtain a job (RODRÍGUEZ ESPINAR et al., 2009). The employability can be defined as the capacity of a person of proceeding in a self-sufficient way in the labour market to develop the potential of the sustainable employment (TAMKIN, HILLAGE, 1999). This capacity depends on the knowledge, on the competences and attitudes that the graduate has, on the way how these resources are used and how he/she presents them to the people that hire and on the context (personal circumstances and the labour market) in looking for a job.

The employability achieves a special significance in the new work stages that are characterized by the flexibility and where people have gone from searching and the achieving of a life-long job (mutual faithfulness between company and worker) to a situation characterized by the permanent preparation for work (life-long employability). The speech of lifelong learning is a demonstration of this change of stage. In this sense, the speeches on employability focus on the need to prepare people for the economy based on knowledge and to encourage them into taking responsibility for their self- employment and employability. Thus, people are responsible of "updating" the expired goods (knowledge and competences) (GARSTEN, JACOBSSON, 2003).

Rodríguez Espinar et al. (2007, 342) state the components that derive from this conception:

Personal potentials	→ Knowledge and skills (to know and to know how to do)
Competences	→ Basic competences| in the professional disciplinary area
	→ Personal attributes (to know be)
	→ Transversal competences of professional action
Skills of marketing and disposition for employment	→ Skills of management of the career: professional self-knowledge, knowledge of the characteristics, requirements and opportunities of the labour market, decision making, authorized to develop and to implement projects
	→ Skills of employment search: knowledge of the information sources and of the rules of the labour market
	→ Attitude/availability: adaptation to the development of the labour market, realism in facing opportunities, occupational and geographical mobility
Presentation (to demonstrate the potentiality and to sell it in a suitable way)	→ Presentation of CV, especially the work experience
	→ Accreditation of qualifications and learning
	→ References and recommendations
	→ Interview techniques
Personal and job context	→ External factors: structure, conditions and characteristics of the labour market
	→ Personal circumstances: age, state, health...
	→ Interrelation between the personal situation and the labour market: selection policies and strategies and of training, fiscal benefits and employment policies (more than 45 years, indefinite contracts, etc)

In short, the employability is multidimensional and people, apart from their personal circumstances (gender, age, social class, etc), differ in multiple aspects:

■ In the knowledge background and abilities (to know and to know how to), knowledge that includes the specific competences of the disciplinary and professional area, and also in the personal attributes (to know how to be), attributes that include the transversal competences of professional actions.[33, 34]

■ In the management skills to fit their professional project, to find work and to maintain it. They differ in the degree of knowledge of the opportunities in the labour market, in the most specific competences of looking for a job (how the CV is presented), but also in more personal aspects that influence on the behavior of exploration (like self-concept or decision making skills).

■ Finally, people present different attitudes when facing an employment: the value of the work is not as central for everybody, different rewards (more or less realistic) are expected and the fitting of the employment in the vital project can diverge. At the same time, this influences on the availability in facing an employment and in the mobility occupational and geographical.

To summarize, many are the factors of personal difference that can mediatise the influence of social and gender determiners as well as of the educational credentials. Unfortunately, however, there is little research about the influence of these factors on the labour insertion of the university collective.

The previously analyzed factors that compose the employability allow identifying "niches of formative action" in which the university training as well as its services of information and orientation have a place. It is possible that the structural factors - of economical character - and the employment policies are more determining, but these factors do not allow the intervention; in return, the employability enables the institutions of higher education and their students and graduates of intervening in a more effective way in the process of insertion in the labour market.

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[33] Brennan (2001), in a study on the demand of competences by the employers, collects the following competences: oral communication, team work, time management, planning and organization, initiative, decision making, work under pressure, accuracy and attention, adaptability. However, the author advises that the list of professional competences varies according to each context, since the typology and the entrepreneurial culture are those that mark the concrete policies of selection and work.

[34] Figuera et al. (2007) point out, in accordance with graduates in Catalan universities, that the way of being - personality, social habilities, comunication, etc. - is the most important factor to get a job, followed by the capacity of management and planning and of team work.

Employability and gender

The employability speech considers gender like another element of the multiple differentiating elements that characterize a person. Gender is not approached directly, but what is approached is the analysis of the personal potential (specific and transversal competences), management skills of the professional career (marketing and presentation) and the attitude towards the employment, questions all that see themselves framed by gender. On the other hand, so far as the information related to the opportunities of the labour market includes elements on its configuration regarding gender (as men predominance or aspects of work organization), difficulties will be able to be foreseen and prepare, for example, presentation strategies that challenge the employer's preconceptions. As Rodríguez Moreno et al (2008, 69) affirm, there will always be limitations on the part of the work context, but also possibilities.

The contribution of the employability speech to the theory on human capital and on social reproduction

The employability theories mediatise the influence of the educational credentials (human capital) as much as the sociodemographic factors in the achievement of a work and the subsequent changes (promotion, professional mobility, etc). Thus, it does not foresee a direct relationship either of the educational credentials or of a social determinism, because it is necessary to add the incidence of the personal factors in the labour market insertion.

Both the theories on human capital as well as those on social reproduction are socioeconomic approaches between the higher educational system and the qualified labour market, although they differ in the value that they concede to the educational credentials (for some they insure the performance or the productivity of the occupational force, while for the other they are an element of selection and of socialization in rules and values). Both theories stand in the most general framework of the labour market insertion (macrocontext), while the employability theories stand in the explanation of the interaction of a person who looks for a job, and the employer (micro context) as the stage where they coincide. This gives the employability speech complements the previous theories.

A model of insertion in the labour market

The model of insertion elaborated by Figuera (1996), and republished in Rodríguez Moreno et al (2008, 71), integrates the three determining factors: social, educational and personal.

Professional insertion in the labour market of the university collective

SUPPLY AND DEMAND ADJUSTMENT

Macro context

- Access to university policies
- Demographic factors
- Trends in the student's choices

- Economy evolution
- Occupational policy
- Support structure to the insertion

Labour market insertion potential = f (amplitude in the own job market + competitiveness in the open job market)

GRADUATE

Objective profile:

- sociodemographic variables
- Educational credentials

Subjective profile:

- Exploration behaviour
- Control expectations
- Meaning of the job
- Image of the profession
- Self-esteem, anxiety, social abilities

EMPLOYMENT

- Recruitment ways
- Selection process and factors
- Interviewer profile

Micro context

In this model, the educational credentials are a mechanism that acts as link between the micro context and the macro context of the insertion in the labour market. As we have seen in chapter 1, the labour market of the graduate population is not homogeneous, but it is segmented: while for some degrees the access to the labour market is regulated and its niche is clearly defined (for example, medicine), for others the labour market is diffuser and is entered in contest with other degrees.

In the access to the employment, the person who looks for a job (with its elections, planning strategies and of job research) and the selection processes of the labour market come together. Therefore, there is not one only determining factor that explains the obtainment or not of a job, but a set of factors that interact between themselves: personal factors (academic curriculum, personal characteristics, family context...) and social factors (work situation).

Criticism to the issue of employability

■ The employability issue has moved the pressure of achievement of a job to people's training, and brought the attention to structural factors of the labour market (MOREAU, LEATHWOOD, 2006). In this sense, it has left in second term the nearer speech to the theory of human capital than to the theories of social reproduction.

■ Brown (2003) points out that the employability is determinate primarily by the labour market and its forms of organization, more than people's capacities.

■ It does not recognize in a sufficient way the role of the labour market and the occupational structures, nor the ways in which the opportunities distribute, for example, by gender, race or social class (BROWN, HESKETH, 2004).

■ As it focuses the responsibility to "find a job" in graduates (in their preparation and behaviour of job search), the responsibility is also transferred to the institution of training in the achievement of a suitable insertion of its graduates in the labour market (PRADES, RODRÍGUEZ ESPINAR, 2009). Thus, the step from the labour market to people and their qualities makes the unemployment be interpreted like an individual problem (BROWN, HESKETH, 2004).

■ It fails in the fact of recognizing that the competences or skills are social constructors, and that are appraised and rewarded in some different ways by the same market depending on the identity and educational identifiers of the working people (for example, the type of university from where the graduate comes).

3

METHODOLOGY

3. METHODOLOGY

This research has the main objective to describe the job situation of graduates from the 2004 promotion, following a range of indicators that can have a continuity value with the aim of a possible observatory of labour insertion of the university collective.

Moreover, we want to analyze, independently for the women's graduate collective, which are the variables associated with a quality insertion. In this way, we will be able to offer orientations and specific policies for the women's collective, more than just focusing on a comparative analysis that would not have such a practical orientation.

The research has been carried out with the data base of the *Third study on labour market outcomes of university graduates in Catalonia*.[35] The study on labour market insertion is a research that uses surveys as a technique to collect information. The instrument of information collection was telephonic interview (CATI system), to obtain information on the transition to a job of graduates and on the appraisal of the student's satisfaction with the training that they received from the point of view of their job experience. On the basis of the collected information we generated up to a total of 150 variables. In annexes I and II you can find the survey and the list of extracted variables.

The reference population of the last study were 23,000 graduates who finished their studies in course 2003-2004, except in Medicine where the graduates finished in course 2000-2001.[36] The study has polled a sample of 12.258 people, in order to ensure the maximum reliability of the results, with the establishment of proportional quotas by studies and universities. The telephonic surveys were carried out between the 16th January and the 13th March of 2008.

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[35] AQU Catalunya, with the support of the social councils of the Catalan universities, carries out studies on insertion in the labour market of university graduates since year 2001, with a triennial periodicity.

[36] In the case of Medicine, the reference population has been the promotion of 2001, since this degree shows a longer work transition: the studies have a duration of six years and, when finishing, the majority prepares for the access examination MIR (tests that give access to a post of specialized training as a resident internal doctor).

Table 3.1 collects the data referred to the population as well as the sample, by knowledge area and gender, and the response rate indicating the corresponding sampling errors.[37]

Table 3.1 | Data on the population and the sample by knowledge area and gender

Areas	Population and sample				Gender			
	Population	Sample	% of response	% sampling error	Men (f)	%	Women (f)	%
Humanities	2,900	1,704	58.76	1.52	534	31.34	1,170	68.66
Social Sciences	10,797	5,474	50.70	0.93	1,550	28.32	3,924	71.68
Experimental Sciences	1,713	1,015	59.25	1.96	397	39.11	618	60.89
Health Sciences	2,427	1,293	53.28	1.86	245	18.95	1,048	81.05
Technical area	5,186	2,772	53.45	1.27	2,031	73.27	741	26.73
Total	**23,023**	**12,258**	**53.24**	**0.61**	**4,757**	**38.81**	**7,501**	**61.19**

For the first objective, the descriptive analysis by gender of the insertion in the labour market, we have carried out a descriptive analysis based on eleven indicators (see tables 3.2 and 3.3), with the use of univariate and bivariate statistics. This analysis allows detecting those variables or groups of variables that will have to be considered in posterior phases.

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[37] The minor magnitude of sampling errors by area or by total are found in general studies. The necessary sample was calculated to obtain a sampling error by degrees and universities not superior to 8%. In practice, this criteria implies that all the population of small degrees (less than 40 graduates) is object of study and that we only marked quotas in degrees with a considerable number of graduates. The detail at a university and degree scale for the group of 2008 can be refered at <http://www.aqu.cat/uploads/insercio_laboral/enquesta2008/index.htm>. An exhaustive analysis of the 2005 group can be refered in Serra Ramoneda (2007) and also in <http://www.aqu.cat/doc/doc_97543694_1.pdf>.

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Table 3.2 | Indicator system

Quality insertion indicators

1.	Employment rate	Percentage of employed people over the total of graduated people
2.	Unemployment rate	Percentage of people looking for work over the total of graduated people
3.	Inactivity rate for family reasons	Percentage of people who do not look for a job due to family reasons (maternity or responsibility of a family member)
4.	Stability rate	Percentage of people with permanent contract
5.	Temporary rate	Percentage of people with temporary contract
6.	Management job functions	Percentage of people with management job functions over the total of employed people. This is a vertical segregation indicator
7.	Job satisfaction	Average of general satisfaction with the current job
8.	Income benefits	Average of gross annual income
9.	Job suitability in relation to university studies	Percentage of people that have university-level job functions over the total of employed people
10.	Rate of part-time jobs	Percentage of people who do not work full-time
11.	Occupational Quality Index (OQI)	The index incorporates four of the most important aspects for defining the quality of employment: the type of contract (C), salary (R), job suitability according to the degree qualification (A) and job satisfaction (S). $$OQI = f[(C + R + A) * S] * 100$$

Table 3.3 | Differential variables system

Access variables	
Socio-economic status	Indicator generated from the attained educational level by the graduate's parents
Access grade	University access grade
Access itinerary	Itinerary through which he/she accesses university[38]

University progress variables	
Area	Degree's knowledge area
Work record	Work during the degree and relationship of the work with the studies
University academic record	Final academic record grade
Studies mobility	Indicator that shows if during the studies there has been any mobility experience

Added value variables	
Continued study	Indicator that shows if once finished the degree, he/she has continued studying
Job mobility	Indicator that shows if there has been a job mobility experience

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[38] We decided to eliminate from the analysis 217 graduates who stem from a previous degree to the degrees of study. This decision is taken when we observed that the average of the IQO for this collective of graduates (66.3%) is much higher than for the rest of graduates who accessed differently. Since we can not know if their employment quality is due to their degree related to this study or their previous degrees, they could skew the results of the analysis so we decided not to take them into consideration.

For the descriptive part we have used different indicators and contrasts depending on the data; quantitative (ordinal or continuous) or categorical (nominal):

■ For the quantitative variables (profits, satisfaction, etc), we have used the traditional descriptive statistics, such as the average, the standard deviation and the sample size. The contrasts of multiple differences for independent samples with unknown variances of population are also used without having evidence on its equality considering a level of signification α equal to 5%.

■ For the categorical variables (employment rate, rate university-level functions, etc), proportions are used as descriptive statistics and the chi squared test is used for the contrast of the differences between the different groups of data with the interpretation of the corrected margin of error.

In relation to the second objective, a multilevel hierarchical model has been developed, only for women's collective, to analyze which explanatory variable influence on the variability of the Occupational Quality Index (OQI). This model supposes that the women graduates that belong to a same subarea of degree[39] are more homogeneous between themselves regarding the occupational quality, and more heterogeneous related to the women graduates that belong to the rest of subareas.

By only choosing the collective of graduate women, the gender variable will not conceal the effect of other explanatory variables and concrete intervention proposals will be able to be deduced. For example, we will be able see if, for university women, the fact of having mobility during their studies allows to improve the possibilities of a quality insertion.

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[39] Before reaching this conclusion, we take into consideration the subarea of university as a macro-level, but we observed that the influence of the university is not significant differentiating the subareas. We conclude that the subarea on its own explains a higher percentage of variability of the OQI than if we consider the university.

4

QUALITY OF INSERTION IN THE LABOUR MARKET AMONG GRADUATE POPULATION

4. QUALITY OF INSERTION IN THE LABOUR MARKET AMONG GRADUATE POPULATION

4.1 Table of indicators for the follow-up of the quality insertion in the labour market

In this section we will describe the quality of the insertion in the labour market of graduates polled in year 2008, three years after graduating, on the basis of a range of indicators that can have continuity value with the aim of a possible observatory of insertion in the labour market of the university collective (see table 4.1).

Table 4.1 | Indicators system

Quality insertion indicators

1.	Employment rate	Percentage of employed people over the total of graduated people
2.	Unemployment rate	Percentage of people looking for work over the total of graduated people
3.	Inactivity rate for family reasons	Percentage of people who do not look for a job due to family reasons (maternity or responsibility of a family member)
4.	Stability rate	Percentage of people with permanent contract
5.	Temporary rate	Percentage of people with temporary contract
6.	Management job functions	Percentage of people with management job functions over the total of employed people. This is a vertical segregation indicator
7.	Job satisfaction	Average of general satisfaction with the current job
8.	Income benefits	Average of gross annual income
9.	Job suitability in relation to university studies	Percentage of people that have university-level job functions over the total of employed people
10.	Rate of part-time jobs	Percentage of people who do not work full-time
11.	Occupational Quality Index (OQI)	The index incorporates four of the most important aspects for defining the quality of employment: the type of contract (C), salary (R), job suitability according to the degree qualification (A) and job satisfaction(S) / OQI = $f[(C + R + A) * S] * 100$

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Next we will describe the quality of the insertion into the labour market of the graduates in accordance with the eleven indicators of table 4.1. The analysis takes into account a personal type of variable (gender) and an educational type variable (area and subarea).[40]

The description of the indicator's behavior for gender, area and subarea will not only allow to describe the quality of the insertion, but to put on trial the utility of the indicators proposed for the follow-up of the quality of the insertion in the labour market.

Indicator 1. Employment rate

The employment rate, together with the unemployment and the inactivity rate, is one of the main follow-up indicators of the situation of the labour markets.[41] It is, therefore, an indicator strongly related to the structural situation of strength or weakness of these markets.

Table 4.2 shows the employment rates of women and men who graduated in year 2004 and were polled in 2008.

In 2008, 93% of the polled women had a job at the time of the survey. This percentage fluctuates between 95% of Health Sciences graduates and 89% of Humanities. The employment rate for men was of 94%, which fluctuates between 96% of Technical area and 90% of Humanities.

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[40] The subareas are groups of similar degrees that have been created to attain a number of graduates big enough to carry out statistical contrast tests. The criteria for the creation of subareas has been the disciplinary affinity with other degrees. See in annex III the relationship between degrees that is included in the subareas.

[41] Table II of annex IV shows the employment, unemployment and activity rate all in one.

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Table 4.2 | Employment rates

	Humanities		Social Sciences		Experimental Sciences		Health Sciences		Technical area		Total	
	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*
Women	89.1	1,170	94.5	3,924	89.3	618	95.3	1,048	93.8	741	93.29	7,501
Men	90.1	534	93.2	1,550	92.2	397	95.1	245	95.5	2,031	93.84	4,757

Technical note: To compare if the differences in the proportions (percentages) of the groups are significant, we will use the chi square test. This test contrasts if the proportions of the variable are distributed homogeneously among the levels of the variable (expected proportion) or, in return, if there are differences between the expected proportion and the one observed.

Table 4.3 summarizes the contrasts carried out between the ten groups (five area categories for two gender categories).[42]

Table 4.3 | Differences in the employment rates between the ten groups. Results summary of the contingency table

	Humanities	Social Sciences	Experimental Sciences	Health Sciences	Technical area
Women	–	+	–	+	=
Men	–	=	=	=	+

The interpretation of the table shows that women in Health Sciences and Social Sciences have significantly higher percentages than the ones expected of their employment. In return, in Humanities and Experimental Sciences women have

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[42] This table is presented when the chi square shows that there are significant differences between proportions. The table summarizes the meaning of the corrected margin of error. The symbol – indicates that there are significantly less people of the ones expected in that group (residual inferior to −1.96), while the symbol + indicates that there are more people of the ones expected in (the residual superior to 1.96). The symbol = indicates that the proportion of observed people is similar to the one expected if the area and gender did not have influence on the employment rate.

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signicantly lower percentages than the ones expected. Finally, the employment rate the Technical area does not show a different behavior from the one expected.

Among men, only two groups differ significantly from the expected behavior: the Technical area, which shows a significantly more positive evolution, and Humanities, that shows a significantly more negative evolution.

It is difficult to explain the behavior of this indicator from a gender perspective. For example, women in Experimental Sciences show significantly lower rates than the rest of collectives, which is not true for men in Experimental Sciences. However, in the case of Social Sciences, the behavior is inverted and the collective of women graduates show higher employment rates than the men's collective. An analysis of the subareas can help us to understand this behavior, since in each knowledge area the distribution of men and women differs according to the typology of degree; thus, for example, in Social Sciences we find more women in teaching (which in this study present very good employment rates) than men.

Table 4.4 allows us to observe that the differences between employment rates vary much more by typology of degree than by gender. Thus, for women, there is a difference of 13 percentage points between the employment rate in Philosophy and Humanities and in Medicine and Dentistry; however, we find the highest difference in a degree in Civil Engineer, with 6.7 points of difference in favour of men.

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Table 4.4 | Employment rates by subareas

	Women			Men			Total
	Employed	%	Total	Employed	%	Total	Dif. %
Geography and History	329	87.27%	377	250	88.65%	282	1.38%
Philosophy and Humanities	98	85.22%	115	72	85.71%	84	0.50%
Philologies and Comparative Studies	545	91.44%	596	129	95.56%	135	4.11%
Fine Arts	71	86.59%	82	30	90.91%	33	4.32%
Economics, Business Administration and Management and Business Sciences	841	95.79%	878	642	94.00%	683	-1.79%
Law, Labour Relations and Political Sciences	878	91.65%	958	397	91.26%	435	-0.38%
Communication and Information Science	273	90.70%	301	110	92.44%	119	1.74%
Psychology and Education Studies	510	94.80%	538	67	90.54%	74	-4.25%
Teacher	1,162	96.75%	1,201	221	95.67%	231	-1.08%
Tourism	45	93.75%	48	8	100%	8	6.25%*
Chemistry	128	87.07%	147	92	91.09%	101	4.01%
Biology and Nature	327	88.86%	368	166	93.26%	178	4.40%
Physics and Mathematics	97	94.17%	103	108	91.53%	118	-2.65%
Nursing	539	94.56%	570	86	92.47%	93	-2.09%
Medicine and Dentistry	235	98.33%	239	93	100%	93	1.67%
Pharmacy and Food Science and Technology	176	95.65%	184	36	94.74%	38	-0.92%
Veterinary Medicine	49	89.09%	55	18	85.71%	21	-3.38%*
Architecture	112	98.25%	114	185	98.93%	187	0.68%
Civil Engineering	55	88.71%	62	126	95.45%	132	6.74%
Nautical Sciences	12	80.00%	15	24	85.71%	28	5.71%*
Advanced Production Technologies	223	95.71%	233	679	95.77%	709	0.06%
Information and Communication	147	95.45%	154	723	94.63%	764	-0.82%
Agricultural	146	89.57%	163	202	95.73%	211	6.16%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

Chart 4.1 shows the subareas that significantly differ from the expected employment rate for the total of the population, if the area and the gender did not have a significant influence. However, it does not show the subareas in which there is a dependence relationship (either positive or negative) with the fact of being employed.

Chart 4.1 |	Differences between employment rates by subareas. Summary of the significant results from the multiple comparisons.[43]

	Less employment possibilities	More employment possibilities
Women	Geography and History	Economics and Business Administration
	Philosophy and Humanities	and Management
	Philologies	Teacher
	Fine Arts	Medicine and Dentistry
	Law, Labour Relations and	Architecture
	Political Sciences	
	Communication and Information Science	
	Chemistry	
	Biology and Nature	
	Nautical Sciences	
	Agricultural	
Men	Geography and History	Medicine and Dentistry
	Philosophy and Humanities	Architecture
		Advanced Production Technologies

For women, the subareas that show a much different behavior from the one expected are Geography and History, with a worse employment rate than the one expected, and teachers, have a higher employment rate than the one expected.

A comparison between men and women shows that, men have few subareas where the differences between the observed frequency and the one expected are significant (seven in total), which seems to indicate that degrees have a greater influence for women than for men. When there are differences, these however go in the same direction than in the case of their degree colleagues.

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[43] This chart is presented when the chi square of the contingency table (in this case between employed people and the 46 subareas broken down by gender) is significant. The chart only shows the subareas for which the corrected margin of error is higher in 1.96 or inferior to -1.96.

Indicator 2. Unemployment rate

The unemployment is an indicator that reflects the whole of unemployed people who are actively looking for a job. It could be argued that the unemployment reflects more a situation of work disarrangement than employment, because a high unemployment rate always implies a disarrangement, while a low employment rate can be linked to a low unemployment but with a high inactivity rate (unemployed people who do not look for a job due to a continuation of their studies, family responsibilities, military service, etc). However, it could also be said that unemployment is a subjective indicator, since the difference between unemployment and inactivity, for example for continuation of studies, is the perception of either the search for a job is primary or secondary to continued studies.

The unemployment rate of the 2008 research is of 3% for the polled population, for men as well as for women (see table 4.5). These low unemployment rates seem to indicate that in year 2008 there was no structural problem in relation to the demand of graduates, but are due to a temporary disarrangement (time that goes by between finishing some studies or losing a job and finding another one), phenomenon known as "frictional unemployment".

Table 4.5 shows the distribution of the unemployment rates between the five areas of graduated women and the five areas of graduated men. The highest unemployment rates of Humanities, for men as well as for women, make us doubt if we are facing a frictional unemployment a structural problem of low demand of this kind of graduates.

Table 4.5 | Unemployment rates

	Humanities		Social Sciences		Experimental Sciences		Health Sciences		Technical area		Total	
	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*
Women	5.8	1,170	2.6	3,924	3.4	618	2.1	1,048	2.7	741	3.09	7,501
Men	5.6	534	3.8	1,550	2.3	397	2.0	245	2.2	2,031	3.11	4,757

As we observe on table 4.5, for women the unemployment varies from 2% in Health Sciences to 6% in Humanities. The unemployment shows, therefore, an inverse behavior that the employment rates.

In the case of men, we find the extreme figures in the same areas than women graduates, with 2% in Health Sciences and 5.6% in Humanities. In this case,

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however, the area with less unemployment (Health Sciences) does not coincide with the area with a higher employment (Technical area), fact that explains itself because the inactivity rate in Health Sciences is of 3% among men, 1 point above the inactivity rate among men in the Technical area.

The analysis of the proportion's distribution offers the following results (table 4.6):

■ In the women's collective, Health Sciences and Social Sciences graduates present significantly lower unemployment rates than the rest of graduates. However, Humanities graduates show significantly higher unemployment rates.

■ In the men's collective, it is also the Humanities graduates that present significantly higher unemployment rates, while men in the Technical area are the only group that significantly lower unemployment rates compared to the rest of groups.

Table 4.6 | Differences in the unemployment rates among the ten groups. Summary of results from the contingency table.

	Humanities	Social Sciences	Experimental Sciences	Health Sciences	Technical area
Women	+	–	=	–	=
Men	+	=	=	=	–

As to the employment rate indicator, the analysis of this indicator from a comparative perspective between men and women is not very informative: there is no women's collective that shows significantly worse unemployment rates compared to their area partners. In return, women of Social Sciences and Health Sciences show significantly better unemployment rates than the rest of graduates, fact that reflects the good behavior of the insertion in the labour market of teachers and nurses. We believe, however, that this interpretation would be slanted, since, as we have seen, in each area the preference of degrees varies depending on gender. Thus, the behavior of the indicators reflects the differential behavior of the teaching and nursing degrees.

Table 4.7 separates the unemployment rates by subareas, which allows us to contrast if the differences stay equal by typology of degrees or if they are due to "effects of composition", that is, the different way that men and women distribute themselves according to the degrees.

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Table 4.7 | Unemployment rates by subareas and by gender

	Women			Men			Total
	Unemp.	%	Total	Unemp.	%	Total	Dif. %
Geography and History	25	6.63%	377	19	6.74%	282	0.11%
Philosophy and Humanities	8	6.96%	115	8	9.52%	84	2.57%
Philologies and Comparative Studies	29	4.87%	596	2	1.48%	135	-3.38%
Fine Arts	6	7.32%	82	1	3.03%	33	-4.29%
Economics, Business Administration and Management and Business Sciences	14	1.59%	878	22	3.22%	683	1.63%
Law, Labour Relations and Political Sciences	35	3.65%	958	22	5.06%	435	1.40%
Communication and Information Science	19	6.31%	301	5	4.20%	119	-2.11%
Psychology and Education Studies	14	2.60%	538	6	8.11%	74	5.51%
Teacher	18	1.50%	1,201	4	1.73%	231	0.23%
Tourism	1	2.08%	48	0	0.00%	8	-2.08%*
Chemistry	7	4.76%	147	1	0.99%	101	-3.77%
Biology and Nature	14	3.80%	368	3	1.69%	178	-2.12%
Physics and Mathematics	0	0.00%	103	5	4.24%	118	4.24%
Nursing	15	2.63%	570	2	2.15%	93	-0.48%
Medicine and Dentistry	1	0.42%	239	0	0.00%	93	-0.42%
Pharmacy and Food Science and Technology	2	1.09%	184	1	2.63%	38	1.54%
Veterinary Medicine	4	7.27%	55	2	9.52%	21	2.25%*
Architecture	1	0.88%	114	2	1.07%	187	0.19%
Civil Engineering	2	3.23%	62	1	0.76%	132	-2.47%
Nautical Sciences	1	6.67%	15	1	3.57%	28	-3.10%*
Advanced Production Technologies	5	2.15%	233	16	2.26%	709	0.11%
Information and Communication	2	1.30%	154	18	2.36%	764	1.06%
Agricultural	9	5.52%	163	7	3.32%	211	-2.20%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

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The unemployment rate varies considerably among typology of degrees (see table 4.7). For women, Physics and Mathematics is the subarea with less unemployment rate (0%) and Fine Arts is the subarea with a higher rate (7%). The differences between men and women are at most 5 percentage points (for example, Psychology and Pedagogy) in favour of women.

Chart 4.2 shows the subareas that diverge in a significant way from the expected unemployment rate for the total of population, if area and gender did not exert significant influence (see the note corresponding to the chi square test at the foot of the page).

Chart 4.2 | Differences between the unemployment rates by subareas. Summary of the results from the contingency table[44]		
	Less unemployment possibilities	More unemployment possibilities
Women	Economics, Business Administration and Management and Business Sciences Teacher	Geography and History Philosophy and Humanities Philologies and Comparative Studies Fine Arts
Men		Geography and History Philosophy and Humanities Law, Labour Relations and Political Sciences Psychology and Education Studies

As we can observe, like what we detected with the employment rate, the typology of degrees is related with the probability of unemployment. However, few are the subareas associated with a higher or lower unemployment rate.

Indicator 3. Inactivity rate for family reasons

The inactivity rates encompass different types of situations (see table III of annex IV for a breakdown of the motives related to not looking for a job). On the one hand, some people can be in situation of inactivity because they are continuing their studies (for example, they are doing a second cycle, a doctorate or they are preparing for a public competitive examination); on the other hand, the inactivity

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[44] See footnote 43 of Chart 4.1.

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cause can be the time dedicated to having children, the attention to a dependent relative or product of other circumstances that are related to household and reproduction. This indicator has been incorporated, following the recommendations by Carrasco (2007), because it is in the non-androcentric line of indicators. Finally, the survey foresees the group "Other motives", which can encompass very diverse motives: illness, long journeys or non-work periods abroad, etc.

The rate of inactivity for family reasons does not reach 1% for women graduates (46 of 7,501) and is 0% for men (2 of 4,757). In total, only 48 people out of 12,258 interviewed have stated that they are unemployed and are not looking for a job for family reasons.

Table 4.8 | Total inactivity and women's inactivity for family reasons, by area

		n total population	*n* inactivity	*n* inactivity for family reasons	Inactivity rate by family/ population	Inactivity rate by family/ inactive
Women	Humanities	1,170	59	12	1.0%	20.3%
	Social Sciences	3,924	114	22	0.6%	19.3%
	Experimental Sciences	618	45	2	0.3%	4.4%
	Health Sciences	1,048	27	7	0.7%	25.9%
	Technical area	741	26	3	0.4%	11.5%
Men	Humanities	534	23	0	0.0%	0.0%
	Social Sciences	1,550	46	1	0.1%	2.2%
	Experimental Sciences	397	22	0	0.0%	0.0%
	Health Sciences	245	7	0	0.0%	0.0%
	Technical area	2,031	47	1	0.0%	2.1%

In short, there are very few women who state to be unemployed and not looking for a job due to family causes. The fact that the major part of women graduates are aged in a range included between 27 and 31 years, period in which they are probably consolidating their financial independence and their family emancipation, can help to explain the reason of these low rates. However, the decision "to put aside the professional career" is more difficult or reluctant among a collective that has invested many years of their life in education.

Table 4.8 seems to indicate that the percentage of inactivity for family reasons is more concentrated in some areas (Health Sciences, Humanities and Social Sciences) than in others (Experimental Sciences and Technical area).

Indicator 4. Percentage of permanent contracts

The work stability is an indicator that is clearly associated with the quality of the insertion in the labour market. However, in determinate areas where, for example, there is a high presence of freelances, this indicator alone is not a good approach to appraise the quality of the insertion in the labour market. Thus, Law, Architecture, Fine Arts or Medicine and Dentistry are subareas where the free exercise of the profession is a tradition (FIGUERA et al, 2007); consequently, the incidence of the permanent contract rate is smaller, but it does have an effect in higher temporary contract rates (tables IV and V of annex IV collect the distribution of the people polled for all the possible foreseen contractual situations).

Table 4.9 | Permanent contract rates

	Humanities		Social Sciences		Experimental Sciences		Health Sciences		Technical area		Total	
	% per.	Total	% per.	Total	% per.	Total	% per.	Total	% per.	Total	% per.	Total
Dones	46.13%	1,149	61.26%	3,890	47.88%	589	51.97%	1,043	58.88%	732	56.30%	1,675
Homes	46.20%	526	65.45%	1,537	47.94%	388	51.85%	243	67.94%	2,015	62.22%	526

per.: permanent

56% of women graduated in year 2004 have permanent contracts three years after finishing their degree. This percentage fluctuates between 46% in Humanities and 61% in Social Sciences. The percentage of men with permanent contracts is slightly higher than for women (62%). The percentage fluctuates between 46% in Humanities and 68% in Technical area.

Table 4.10 summarizes the results of the contingency table shaped by ten groups (five for women and five for men). We observe that:

■ Among women, only Social Sciences graduates present a better behavior from the one expected (higher percentage of permanent contracts), while in Humanities, Health Sciences and Experimental Sciences the behavior of job stability is worse than the one expected. Being a woman in the Technical area does not have any relationship with the percentage of permanent contracts. It is necessary to say that, as we can see on table 4.10, the good behavior of Social Sciences is due to the high rates of permanent contracts in the economic degrees.

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■ Among the men's collective, the areas show an equal behavior than women, with the only difference that being a man in the Technical area is positively related with the fact of having a higher proportion than expected of permanent contracts.

Table 4.10 | Differences in the permanent contract rates among the ten groups

	Humanities	Social Sciences	Health Sciences	Experimental Sciences	Technical area
Women	–	+	–	–	=
Men	–	+	–	–	+

The analysis of table 4.10 leads us to reject, again, a simplistic interpretation as a result of comparing the behaviours by gender. The only area that presents different results depending on gender is the Technical area: for women, being in Technical area is not related with the percentage of permanent contracts (neither favourably nor unfavourably), but in the case of men it is related with a greater proportion of permanent contracts. It is necessary to remember, however, that in the Technical area men and women are distributed in a different way according to the degrees (there is a greater proportion of women in Architecture and less proportion in industrial area of degrees). Thus, the global differences could be explained by the greatest presence of women in degrees such as teaching or nursing or architecture.

Table 4.11 allows us to ascertain that job stability is strongly linked to the typology of degrees and that, against what the combined percentages seem to indicate, in some subareas the job stability is higher in women.

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Table 4.11 | Permanent contract rates by subareas

	Women			Men			Total
	Yes	%	Total	Yes	%	Total	Dif. %
Geography and History	193	52.30%	369	137	49.46%	277	-2.85%
Philosophy and Humanities	58	52.73%	110	39	48.15%	81	-4.58%
Philologies and Comparative Studies	253	42.95%	589	57	42.22%	135	-0.73%
Fine Arts	26	32.10%	81	10	30.30%	33	-1.80%
Economics, Business Administration and Management and Business Sciences	721	82.49%	874	533	78.27%	681	-4.23%
Law, Labour Relations and Political Sciences	574	61.00%	941	265	62.06%	427	1.06%
Communication and Information Science	167	56.23%	297	53	44.92%	118	-11.31%
Psychology and Education Studies	275	51.50%	534	42	56.76%	74	5.26%
Teacher	611	51.09%	1,196	108	47.16%	229	-3.93%
Tourism	35	72.92%	48	5	62.50%	8	-10.42%*
Chemistry	92	67.15%	137	60	60.61%	99	-6.55%
Biology and Nature	136	38.64%	352	70	39.77%	176	1.14%
Physics and Mathematics	54	54.00%	100	56	49.56%	113	-4.44%
Nursing	279	49.03%	569	42	45.65%	92	-3.38%
Medicine and Dentistry	102	42.86%	238	51	54.84%	93	11.98%
Pharmacy and Food Science and Technology	133	73.48%	181	20	54.05%	37	-19.43%
Veterinary Medicine	28	50.91%	55	13	61.90%	21	11.00%*
Architecture	38	33.63%	113	66	35.29%	187	1.67%
Civil Engineering	34	55.74%	61	92	70.23%	131	14.49%
Nautical Sciences	10	83.33%	12	17	60.71%	28	-22.62%*
Advanced Production Technologies	162	69.83%	232	521	73.80%	706	3.97%
Information and Communication	114	75.00%	152	565	75.03%	753	0.03%
Agricultural	73	45.06%	162	108	51.43%	210	6.37%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

As we can see, the distribution of permanent contracts varies in a significant way by subareas. Thus, while only 32% of contracts in Fine Arts are permanent, 83% in Nautical Sciences or 82% in Economy Sciences and Business Administration and Management

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are permanent contracts. That is, in the women's collective, we find differences of more than 50 percentage points according to the finished degrees. In one same degree we also find differences by gender, in lower percentages, but that can reach up to 20 percentage points, in general in favour of a greater job stability for women (Nautical Science, Pharmacy and Food Science and Technology). Therefore, we cannot say that men enjoy a higher job stability than women, which conflicts with the theses that defend that women have more unstable job situations. We will treat, this point, again in the following section, in which the rates of temporary contracts are analyzed.

Chart 4.3 allow us to visualize which typology of degrees, for women, are associated to a higher percentage of permanent contracts, and which subareas are associated to a lower presence of permanent contracts. Although, it does not show the subareas for which a dependence relationship (either positive or negative) with the fact of having a permanent was not found.

Chart 4.3 | Differences between rates of permanent contracts by subareas. Summary of the results from the contingency table[45]

	Less probability of having a permanent contract	More probability of having a permanent contract
Women	Geography and History Philologies Fine Arts Psychology and Education Studies Teacher Biology and Nature Nursing Medicine and Dentistry Architecture	Economics and Business Administration and Management Tourism Chemistry Pharmacy, Science and Food Technology Advanced Production Technologies Information and Communication
Men	Geography and History Philologies Fine Arts Comunicació Teacher Biology and Nature Physics and Mathematics Nursing Architecture Agricultural	Economics and Business Administration and Management Civil Engineering Advanced Production Technologies Information and Communication

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45 See footnote 43 of Chart 4.1.

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As we observe in chart 4.3, the Humanities and the ones related with the access to public functions (teachers, nurses, doctors) are associated with more temporary contracts. Architecture is another degree where job stability is very low, since in this degree it is more usual to be a freelance. In return, degrees such as Economy Science or Advanced Production Technologies that are degrees where the insertion in the labour market is predominantly in the private area, are associated with a greater job stability.

Finally, there is no subarea that is positively associated to a gender with the fact of ending up enjoying a permanent contract, while in others it is negatively associated. This reinforces the idea that gender does not determine a good or bad situation, but the chosen degree does.

Indicator 5. Percentage of temporary contracts

Globalization of the economy, on increasing the competitiveness and the need to adapt oneself in a fast way to changing circumstances, has provoked a change of practices and speeches where the "flexibility" turns into a highly appraised quality. By flexibility we understand not only the capacity of the working person to assume a diversity of tasks or functions in their job, but also its availability to change of job or company according to the needs of that moment (FULLER, 2005).

This change in the nature of job relations has also been fostered by legal reforms and the creation of new types of contracts, that, on the other hand, include to lower the costs of dismissal (BELOT, VAN OURS, 2002, quoted in SALLADARRE, HLAIMI, 2007). In the European countries the percentage of permanent contracts over the total of wage-earning population went from being 5.5% in year 1983 to 14% in year 2005 (OECD, 2007, quoted in SALLADARRE, HLAIMI, 2007). Several researches in the United States have shown decrepit the traditional idea of having a professional career in an only company (CAPPELLI, 1999; OSTERMAN, 1996, quoted in FULLER, 2005).

Table 4.12 | Temporary contract rates

	Humanities		Social Sciences		Experimental Sciences		Health Sciences		Technical area		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Women	41.78%	1,149	32.75%	3,890	38.03%	589	33.65%	1,043	27.60%	732	34.19%	7,403
Men	35.36%	526	24.07%	1,537	31.19%	388	29.63%	243	18.06%	2,015	23.64%	4,709

Temporary contracts affect a third of graduated women: it fluctuates between 42% in Humanities and 28% in the Technical area. In the case of men, the temporary contracts affect a quarter of the total: it fluctuates between 35% in Humanities and 18% in the Technical area.

Table 4.13 | Differences in the temporary contract rates

	Humanities	Social Sciences	Health Sciences	Experimental Sciences	Technical area
Women	+	+	+	+	=
Men	+	-	=	=	-

Table 4.13 shows that the area has influence on the fact of ending up in a job with a temporary contract, and that this effect is slightly different for each gender:

■ Women from all areas (except Technical area) have a higher proportion of having a temporary contract than expected.

■ In the case of men, the area of Social Sciences and Technical area have significantly lower temporary rates from the ones expected. In return, Humanities has a significantly higher rate of temporality. The rest of areas do not show differences according to the expected behavior, that is, the fact of being a man in Experimental Sciences or Health Sciences is not associated with a higher or lower rate of temporality.

From a gender comparative point of view, we see that in one area (Social sciences) it seems like there is a situation of discrimination towards women, since women have more temporary contracts from the ones expected and men have less than expected if the distribution was homogeneous.

Table 4.14 also draws our attention to simplistic interpretations of this indicator: the temporary contracts depend on the degrees. Thus, the processes of access to public functions (education or health) are characterized by temporary contracts.

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Table 4.14 | Temporary contract rates by subareas

	Women			Men			Total
	Yes	%	Total	Yes	%	Total	Dif. %
Geography and History	134	36.31%	369	93	33.57%	277	-2.74%
Philosophy and Humanities	42	38.18%	110	23	28.40%	81	-9.79%
Philologies and Comparative Studies	265	44.99%	589	57	42.22%	135	-2.77%
Fine Arts	39	48.15%	81	13	39.39%	33	-8.75%
Economics, Business Administration and Management and Business Sciences	123	14.07%	874	94	13.80%	681	-0.27%
Law, Labour Relations and Political Sciences	266	28.27%	941	89	20.84%	427	-7.42%
Communication and Information Science	105	35.35%	297	48	40.68%	118	5.32%
Psychology and Education Studies	208	38.95%	534	23	31.08%	74	-7.87%
Teacher	560	46.82%	1,196	115	50.22%	229	3.40%
Tourism	12	25.00%	48	1	12.50%	8	-12.50%*
Chemistry	35	25.55%	137	20	20.20%	99	-5.35%
Biology and Nature	152	43.18%	352	63	35.80%	176	-7.39%
Physics and Mathematics	37	37.00%	100	38	33.63%	113	-3.37%
Nursing	210	36.91%	569	28	30.43%	92	-6.47%
Medicine and Dentistry	94	39.50%	238	32	34.41%	93	-5.09%
Pharmacy and Food Science and Technology	31	17.13%	181	7	18.92%	37	1.79%
Veterinary Medicine	16	29.09%	55	5	23.81%	21	-5.28%*
Architecture	20	17.70%	113	18	9.63%	187	-8.07%
Civil Engineering	19	31.15%	61	27	20.61%	131	-10.54%
Nautical Sciences	2	16.67%	12	10	35.71%	28	19.05%*
Advanced Production Technologies	60	25.86%	232	117	16.57%	706	-9.29%
Information and Communication	31	20.39%	152	125	16.60%	753	-3.79%
Agricultural	70	43.21%	162	67	31.90%	210	-11.31%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

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As naturally expected, temporality highly depends on the degree, like in the permanent contract rate. Thus, for women, we find differences of 34 percentage points according to the finished degree: Fine Arts and Teacher have maximum punctuations, while Economics and Business Administration and Management and Pharmacy are the both subareas with less temporality.

The percentages of temporality by degrees are much more similar than the global ones (where the differences reach up to 9 percentage points). And, although we find qualifications like Law where women's temporality is 10 points higher than men, there are other degrees where the difference is in favour of women.

However, although by degrees there is more temporality for women; it is also true that we have found a higher percentage of permanent contacts in women. This apparent paradox is due to the fact that, besides permanent and temporary contracts, the options of type of contract include autonomous, scholar or to have an irregular contractual situation (no contract). The tables IV and V of annex IV show the distribution of men and women in these five options.

Chart 4.4 allows us to visualize which degrees, for women, are associated to a higher percentage of temporary contracts and which subareas are associated to a lower presence of temporary contracts. However, it is not shown the subareas for which a relationship of dependence (either positive or negative) with the fact of having a temporary contract was not found.

As we observe in chart 4.4, the only degrees associated with little temporality are from industry and construction. The private area has more apparent stability than the public area. There is no subarea that is positively associated by gender with the fact of ending up having a temporary contract, while in the other one it is associated negatively.

Chart 4.4 | Differences between temporary contract rates by subareas. Summary of significant results from multiple comparisons

	More probabilities of having a temporary contract	Less probabilities of having a temporary contract
Women	Geography and History Philologies Fine Arts Comumnication and Information Science Psychology and Education Studies Teacher Biology and Nature Nursing Medicine and Dentistry Agricultural	Economics and Business Administration and Management Pharmacy,Science and Food Technology Architecture Information and Communication
Men	Philologies Communication and Information Science Teacher	Economics and Business Administration and Management Law, Labour Relations and Political Sciences Chemistry Architecture Civil Engineering Advanced Production Technologies Information and Communication

Chart 4.5 collects the subareas that are in one of the following situations: subareas where women present more stability (permanent contract) but also a higher percentage of temporality, and subareas where certain discrimination (a gender shows higher percentages of permanent contracts and lower percentages of temporary contracts than the other one) can be discerned.

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Chart 4.5 | Comparisons between stability and temporality

Degrees where women have greater stability (permanent contracts) than men, but also have more temporality:[46]

- Geography and History
- Philosophy and Humanities
- Philologies and Comparative Studies
- Fine Arts
- Economics and Business Administration and Management
- Chemistry
- Physics and Mathematics
- Nursing

Degrees where there can be a discrimination in favour of women (less stability and more temporality):

- Psychology and Education Studies
- Medicine and Dentistry
- Veterinary Medicine
- Civil Engineering
- Advanced Production Technologies
- Agricultural

Degrees where there can be a discrimination in favour of men (less stability and more temporality):

- Communication and Information Science

In short, the myth that women present more temporality than men is not applicable in our research collective (university graduates three years after finishing their studies). The reality is more complex: the temporality is linked to the typology of degree (subarea) and cannot be interpreted without also appraising the permanent contract rate as an indicator. Thus, what happens is that, for a same typology of degrees, women have more permanent contracts and also more temporary contracts, because they do not opt as much as their colleagues to scholarships or to become freelancers.

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[46] In these degrees, men show less stability and less temporary contracts, but there is a higher percentage of freelances or grant holders (continued studies).

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However, it is necessary to point out that, when the graduates collective work in the public area and are teachers or dedicated to nursing or medicine, this situation does not have to be read negatively, since the natural access process to public functions goes through periods of replacements and of internships. For these degrees the job situation is equal or more stable than in other graduates that do have a permanent contract in a private company, for example.

Finally, a negative interpretation of temporality in areas that are to access a public function, and also the use of comparisons between men and women without differentiating their degrees leads to creating images where women's insertion in the labour market "is victimized" and does not represent the situation of this collective.[47]

Indicator 6. Management job functions

The percentage of employment in management job functions allows us to observe the degree in which university graduates accesses hierarchical positions of responsibility. In the reading and interpretation of the results of our research it is necessary to bear in mind that, after three years of obtaining the title, this indicator informs us of the speed in which a graduate can promote or acquire high standard positions in a hierarchical scale. Finally, it is also important to bear in mind that the professional itinerary is different depending on the profession. Thus, a teacher can acquire a suitable and of considerable autonomy and responsibility position in very little time, but once its attained it has very few options to have a professional itinerary; in return, in the industrial area, one can have an initially less "high" position, but a longer itinerary (technician in formation, technician, head of laboratory, plant manager, head of production or of management posts in the company, for example).

The access to management has been a widely used indicator in the gender bibliography, especially from the equality point of view. Thus, from this perspective, it is ascertained that the progressive insertion of woman in the labour market during the last decades contrasts with the persistence of their exclusion from managerial responsibility posts (glass ceiling phenomenon). The differences in favour of men in the percentages of having management functions in equality with the educational level and professional development have been traditionally explained by the glass ceiling: "[...] that set of unwritten laws or company culture that does not allow their

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[47] In spite of the positive reading of temporality in the access to public functions, it is necessary to remember that this access is not a "bed of roses". It is probable, for example, that some teaching graduates opt to work in the private area, so that it compensates them more than the continuous changes of the first years with the subsequent processes of adaptation and anxieties tied to the process of public competitive examinations than the continuous changes of the first years.

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access" (CHINCHILLA, POELMANS, LEÓN, 2005). More recently, the inequalities have been understood also by what some authors have called concrete ceiling: "[...] auto-imposed by personal elections, such as denying the promotion to more rigid and demanding management posts" (CHINCHILLA, POELMANS, LEÓN, 2005). In this second case, women "opt" not to carry out management functions because it would be incompatible with their role in the family area as being the main party responsible for reproduction.

The percentages of women who carry out management functions stands in a fork that goes from 18.50% in Health Sciences to 40% in the Technical area. Men show similar trends by areas, in spite of their slightly higher percentages: between 22.5% in Health Sciences and 47.8% in the Technical area.

Table 4.15 | Employment in management posts

	Humanities		Social Sciences		Health Sciences		Experimental Sciences		Technical area		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Women	20.1%	1,149	30.0%	3,890	18.5%	1,043	22.4%	589	40.4%	732	27.3%	7,403
Men	24.1%	526	41.3%	1,537	22.5%	243	23.5%	388	47.8%	2,015	39.7%	4,709

As we can observe in table 4.16, for the women graduates, Humanities, Social Sciences, Experimental Sciences and Health Sciences present less women from the ones expected with management functions, while in the Technical area there are more women than the ones expected carrying out management functions. The area is, therefore, a clearly related factor with the fact of ending up developing management functions. For men the area is also clearly related with the fact of ending up having management functions.

Social sciences, as to the indicator of temporality, is the only area in which we find a different behavior for each gender. Thus, while there are less woman graduates with management functions of the ones expected in Social Sciences, there are more men graduates than the ones expected in the same area carrying out these functions.

Table 4.16 | Employment in management posts. Summary of results from the contingency table

	Humanities	Social Sciences	Health Sciences	Experimental Sciences	Technical area
Women	–	–	–	–	+
Men	–	+	–	–	+

The possibility of developing management functions is clearly linked to the typology of contract. Thus, all freelances manage their own company, and it is much more probable that those who have a permanent contract develop management functions than those who have a temporary contract. On table 4.17 we show the percentage of people who develop management functions excluding freelances, but not the temporary ones, because it would significantly reduce the sample and would skew it by subareas.

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Table 4.17 | Employment in management posts by subareas and by gender (excluding freelances)

	Women			Men			Total
	Yes	%	Total	Yes	%	Total	Dif. %
Geography and History	72	20.87%	345	56	22.05%	254	1.18%
Philosophy and Humanities	27	25.71%	105	17	23.29%	73	-2.43%
Philologies and Comparative Studies	77	14.10%	546	25	20.49%	122	6.39%
Fine Arts	11	15.94%	69	3	11.11%	27	-4.83%*
Economics, Business Administration and Management and Business Sciences	412	48.47%	850	332	52.20%	636	3.73%
Law, Labour Relations and Political Sciences	348	40.05%	869	148	39.89%	371	-0.15%
Communication and Information Science	98	35.13%	279	32	31.07%	103	-4.06%
Psychology and Education Studies	88	17.60%	500	16	23.88%	67	6.28%
Teacher	119	10.05%	1,184	15	6.70%	224	-3.35%
Tourism	17	36.17%	47	1	16.67%	6	-19.5%*
Chemistry	38	27.94%	136	18	18.95%	95	-8.99%
Biology and Nature	74	21.39%	346	40	23.81%	168	2.42%
Physics and Mathematics	18	18.00%	100	21	19.44%	108	1.44%
Nursing	70	14.23%	492	13	18.31%	71	4.08%
Medicine and Dentistry	7	3.41%	205	6	7.14%	84	3.73%
Pharmacy and Food Science and Technology	56	32.56%	172	14	45.16%	31	12.60%
Veterinary Medicine	9	19.57%	46	5	25.00%	20	5.43%*
Architecture	35	59.32%	59	55	65.48%	84	6.15%
Civil Engineering	28	47.46%	59	72	57.14%	126	9.69%
Nautical Sciences	5	41.67%	12	10	35.71%	28	-5.95%*
Advanced Production Technologies	83	36.73%	226	325	49.85%	652	13.12%
Information and Communication	47	31.76%	148	244	33.94%	719	2.18%
Agricultural	58	38.16%	152	84	46.93%	179	8.77%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

As we can see, there are degrees, such as medicine or teaching, in which the percentage of people who develop management functions is low. It is noteworthy to say that, however, in these collectives people have more responsibility and autonomy than the average employee. In return, there are other professions, like architecture, that is closely associated to carrying out these functions.

The apparent differences in the area of Social Sciences for men and women (see table 4.15) are due to the highest proportion of women in teaching degrees and the low proportion of women in economic science and Business Administration and Management (these last degrees present a high probability of carrying out management functions, while teaching presents a lower probability).

In a same subarea, however, we find slightly higher percentages of management functions for men than for women. The reading of the column with the differences of percentages between men and women shows that the greatest differences seem to concentrate in the industrial area. A possible explanation ends up in the fact that it is precisely a traditionally male sector, in which stereotypes (old-boy network theories) yet have not changed and keep on prejudicing an equitable insertion in the labour market; thus, the glass ceiling is clearer in the traditionally male sectors.

The subarea in which the differences are higher is in Advanced Production Technologies. However, it is necessary to consider that the distribution of men and women in this subarea is very different, as we can see in table 4.18.

Table 4.18 | Distribution of men and women by degree in the subarea of Advanced Production Technologies

	Women		Men		Difference
	n	%	*n*	%	%
Technical Industrial Engineers (Industrial Chemistry)	76	32.76%	65	9.21%	-23.55%
Chemistry Engineering	67	28.88%	69	9.77%	-19.11%
Technical Industrial Engineering (Electronics)	11	4.74%	146	20.68%	15.94%
Technical Industrial Engineering (Mechanical)	11	4.74%	133	18.84%	14.10%
Technical Industrial Engineering (Electricity)	5	2.16%	61	8.64%	6.49%
Industrial Engineering	39	16.81%	147	20.82%	4.01%
Automation and Industrial Electronics Engineering	1	0.43%	20	2.83%	2.40%
Technical Industrial Engineering (Textile)	7	3.02%	6	0.85%	-2.17%
Industrial Organization Engineering	12	5.17%	46	6.52%	1.34%
Industrial Material Engineering	3	1.29%	13	1.84%	0.55%
Total	**232**	**100%**	**706**	**100%**	

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Therefore, it would be necessary to ask ourselves if the differences detected in the subarea are due to a possible gender discrimination in the labour market or to the fact that the labour market shows different opportunities to carry on this type of functions according to the typology of degree. For example, in the chemical industry, before accessing management posts, technical functions of laboratory are normally developed; however, it could happen that this itinerary was not followed by the industrial technicians in electronics or mechanics, for example.

Chart 4.6 summarizes the subareas where there are significantly more or less opportunities to end up developing management functions.

Chart 4.6 | Employment in management posts. Summary of the results from the contingency table

	Less probabilities of developing management functions (own company, production management, financial management...)	More probabilities of developing management functions (own company, production management, financial management...)
Women	Geography and History Philologies and Comparative Studies Fine Arts Psychology and Education Studies Teacher Biology and Nature Physics and Mathematics Nursing Medicine and Dentistry	Economics, Business Administration and Management and Business Sciences Law, Labour Relations and Political Sciences Architecture Civil Engineering Agricultural
Men	Geography and History Philologies and Comparative Studies Teacher Chemistry Physics and Mathematics Medicine and Dentistry	Economics, Business Administration and Management and Business Sciences Law, Labour Relations and Political Sciences Pharmacy, Science and Food Technology Architecture Civil Engineering Advanced Production Technologies Information and Communication Agricultural

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In short, the probability of carrying out management functions is highly linked to the degree that has been studied. In the economic and juridical degrees is where we find the highest probability, by far, of ending up developing management functions. Followed by architecture, because it is a degree in which the free practice in this

profession is traditional. Civil engineer is another career where after three years management functions are carried out (construction manager). In return, the careers with job exits in the education world, research and health offer very low opportunities of carrying out management to those who have graduated three years prior.

Indicator 7. Job satisfaction

The general job satisfaction is a subjective indicator of the quality of the insertion in the labour market. Although some authors recommend not to use this variable due to its low correlation with other more objective indicators, the consistency of this data is indisputable and it could be argued that, precisely, what is most important in the job situation is the experience and if it is satisfactory situation or not. The satisfaction, in any case, measures a dimension of the quality that other objective indicators do not collect, and is a specially interesting indicator in phases of job integration, since it allows us to value in which degree the graduates perceive that they have attained an acceptable employment status in accordance with the professional career or if they are still fighting to have a place and consider their job situation not so satisfactory (COROMINAS et al., 2007).

Using subjective appraisals of the population means a change of paradigm, because the quality of the employment goes from being fixed by specialists in being socially described by the same graduate population. It is necessary to take into account, however, that the satisfaction is related to the objectives that one has fixed. Thus, there are researches that show that the young population have different visions on what they expect from their job: it goes from considering it like a pure instrument (to nourish the family) up to considering that a job has to correspond to a project or a passion (DUBAR, 2001).

Finally, it is necessary to be cautious with this indicator when it is used from a gender point of view, because, in front of different objective indicators, men and women can show a similar satisfaction. Baudelot and Serre (2006) explain the following paradox: while in equality of conditions women earn between 11 and 12% less than men, the appraisals that they make of their respective wages have no differences.

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Table 4.19 | **Average job satisfaction.**
Scale from 1 (not satisfied at all) to 7 (very satisfied)

		Average	St. deviation	*n*
Women	Humanities	5.47	1.265	1,032
	Social Sciences	5.65	1.067	3,693
	Experimental Sciences	5.36	1.108	550
	Health Sciences	5.58	1.020	995
	Technical area	5.4	1.039	692
	Total	**5.57**	**1.098**	**6,962**
Men	Humanities	5.12	1.362	472
	Social Sciences	5.34	1.139	1,435
	Experimental Sciences	5.36	1.100	365
	Health Sciences	5.43	1.067	232
	Technical area	5.31	1.067	1,936
	Total	**5.31**	**1.130**	**4,440**

Data on table 4.19 shows that graduates are reasonably satisfied with their current job:

■ Among women, the area of Social Sciences shows the highest rate of satisfaction (5.65), while Experimental Sciences has the lowest average (5.36).

■ Among men, those in Health Sciences have the highest satisfaction rate (5.43), while the ones in Humanities show the less satisfaction with their job (5.12).

Table 4.20 shows the results oriented from less to more general satisfaction with the job. The results of a subset do not differ significantly between themselves. It can be that an average is part of different subsets, which indicates that this average does not significantly differ from any of the averages of the subsets where it is present.

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Table 4.20 | Satisfacció amb la feina actual

Gender - Area	n	Subset for alfa = 0.05			
		1	2	3	4
Men - Humanities	472	5.12			
Men - Technical area	1,936	5.31	5.31		
Men - Social Sciences	1,435	5.34	5.34	5.34	
Women - Experimental Sciences	550	5.36	5.36	5.36	
Men - Experimental Sciences	365	5.36	5.36	5.36	
Women - Technical area	692		5.40	5.40	5.40
Men - Health Sciences	232		5.43	5.43	5.43
Women - Humanities	1,032		5.47	5.47	5.47
Women - Health Sciences	995			5.58	5.58
Women - Social Sciences	3,693				5.65
Sig.		.109	.734	.093	.061

Globally, there are few significant differences between the ten groups subject to multiple comparisons (five areas for women and five areas for men).

Regarding women, there are only significant differences between those in Social Sciences (with a 5.65 satisfaction average) and those in Experimental Sciences (5.36). The differences between the other possible groups of areas are not significant. Between men and women there are no significant differences by any area.

When we separate the results by subareas, the differences between the averages detected at scale of area disappear: the differences between the 46 subgroups (23 subareas by gender) are not significant between themselves. Between men and women, the differences are very small. Thus, even though the trend that women appraise their job situation as more satisfactory, the differences are smaller.

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Table 4.21 | Satisfaction averages by subareas and by gender

	Women			Men			Total
	Yes	%	Total	Yes	%	Total	Diff. %
Geography and History	325	5.30	1.36	247	4.98	1.42	-0.32
Philosophy and Humanities	98	5.41	1.21	69	4.96	1.53	-0.45
Philologies and Comparative Studies	541	5.59	1.17	128	5.42	1.11	-0.16
Fine Arts	68	5.43	1.55	28	5.46	1.26	0.04*
Economics, Business Administration and Management and Business Sciences	840	5.51	1.06	641	5.30	1.12	-0.21
Law, Labour Relations and Political Sciences	869	5.52	1.11	391	5.30	1.16	-0.22
Communication and Information Science	273	5.28	1.17	108	5.10	1.25	-0.18
Psychology and Education Studies	507	5.63	1.11	67	5.37	1.01	-0.26
Teacher	1,159	5.97	0.91	220	5.65	1.07	-0.32
Tourism	45	5.33	1.11	8	5.25	1.58	-0.08*
Chemistry	128	5.45	0.97	91	5.31	1.03	-0.14
Biology and Nature	325	5.30	1.14	166	5.40	1.16	0.11
Physics and Mathematics	97	5.44	1.18	108	5.34	1.07	-0.10
Nursing	537	5.69	1.06	86	5.42	1.07	-0.27
Medicine and Dentistry	234	5.56	0.93	93	5.53	1.02	-0.04
Pharmacy and Food Science and Technology	175	5.36	0.95	35	5.26	1.34	-0.10
Veterinary Medicine	49	5.37	1.03	18	5.28	0.67	-0.09*
Architecture	111	5.57	0.96	185	5.39	0.98	-0.18
Civil Engineering	54	5.37	0.92	126	5.39	0.96	0.02
Nautical Sciences	12	5.42	1.31	24	5.50	0.78	0.08*
Advanced Production Technologies	222	5.30	1.05	679	5.34	1.10	0.04
Information and Communication	147	5.49	0.97	721	5.25	1.07	-0.24
Agricultural	146	5.36	1.15	201	5.32	1.10	-0.04

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

Among women, the satisfaction by subareas oscillates between 5.7 of Health professionals and 5.3 of Communication and Information Science (0.40 on a scale of 7 points). The indicator is so homogeneous that the average of satisfaction of women in Geography and History is the same as for those in Biology and Nature or those of Advanced Production Technologies, in spite of the different job conditions among these subareas (temporality rates, percentage of management functions or suitability rates).

In short, the average of satisfaction does not differ significantly by gender. But even more: in the women's collective, facing different job situations they also present similar satisfaction averages. These results have led to questioning the utility of this indicator in the range of indicators for the appraisal of the quality of the insertion in the labour market.

Indicator 8. Income benefits[48]

The income indicator has been in a widely used in social studies (studies on labour market insertion, social mobility, gender, etc). Thus, we find studies that associate the educational level with the profits (MIRET et al., 2008; CAIXA CATALUNYA, 2009; OCDE, 2009), while we find others that analyze the differences in salary between men and of women with higher education (MOREAU, LEATHWOOD, 2006; BRENNAN, SHAH, 2003; GRAHAMA, SMITH, 2005; BAKER, 1996; JOY, 2003; CHEVALIER, 2002; CHEVALIER, 2007).

The first typology of studies clearly demonstrates that there is a positive relationship between the level of studies and the salary income among the young population, with differences that in this age bracket are more reduced than in advanced ages, because the itinerary of people with higher education is longer than people without studies that access less qualified jobs. The international comparative data (OCDE, 2009) show that in Spain the differences are smaller than in other countries. However, for Spanish women the benefits of higher education are greater than for men, the difference between the salary of women graduates and the non-graduate ones is greater than between graduated men and non graduated ones.

The second typology of studies show that university women have lower salaries than their men colleagues, with the exception of the study by Baker (1996), which focuses on the wages of the doctors. This author affirms that, although at first sight men doctors earn more than women doctors, this is due to the fact that men dedicate

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[48] 88% of the polled people worked at full-time jobs. The annual incomes have been calculated based on this collective (n = 9,737).

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more hours than their woman degree colleagues in professional practice, while the proportion of specialists is higher among men, and many opt to exercise the profession in a liberal way (freelances). When the education, the personal characteristics, the context of medical practice and the experience are controlled, the salary differences completely disappear.

In studies where differences by gender have been found, we manage two alternative theories (GRAHAMA, SMITH, 2005):

■ From the theories of the human capital, the specialized character of the areas of sciences and technologies would favour transparent selection processes based on little ambiguous criteria.

■ From the theories of the glass ceiling and the old-boy networks (colleagues networks), the job sectors that have traditionally been dominated by men prejudice women's wages.

Moreover, it would be necessary to introduce a new axis of inequality, like the greater family responsibility that women assume in the family area is: "indirect discrimination" in terms of the Law of equality, or concrete ceiling for some authors (CHINCHILLA, POELMANS, LEÓN, 2003).

The income, which in the study on labour market insertion are collected as "Gross annual incomes" (see table I of annex II for a description of the variable's categories, it is a vaguely reliable indicator. In first place, there is a certain resistance to offer this data[49] and, in second place, there is the question on how to collect the information (it is easier to remember the monthly income, but it makes it hard for freelances or for those who have more than one job, and the number of payments or fringe benefits are not included, for example). For this motive, the gross annual income amount was opted, and it was collected through intervals.

Finally, beyond its reliability, this indicator has also received criticisms from other authors, who consider that the "profession" or "employment" is a more complete and precise concept than income, because, since it is a little more than just a way to earn money, it constitutes an index and symbol of a way of life of the people and of prestige level that others assign to it (PLANAS et al., 2009).

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[49] 6% of the 10,326 full-time employed people reserves the answer to themselves when speaking of incomes.

Table 4.22 | Monthly incomes[50]

		Women			Men			Total
		Average	*n*	Stand. dev.	Average	*n*	Stand. dev.	Diff. average
Graduate	Social Sciences	1,576.76	1,662	426.78	1,782.83	533	506.69	206.07
	Experimental Sciences	1,808.82	17	388.10	2,100.88	19	574.39	292.05*
	Health Sciences	1,609.41	393	488.34	1,680.97	67	544.41	71.56
	Technical area	1,850.93	315	539.39	2,108.05	927	552.52	257.13
Licentiate	Humanities	1,561.30	711	489.71	1,607.24	352	530.00	45.95
	Social Sciences	1,764.23	1,444	533.91	1,934.46	698	598.66	170.23
	Experimental Sciences	1,709.36	406	520.60	1,871.83	250	565.44	162.47
	Health Sciences	1,993.56	330	642.23	2,137.68	92	663.36	144.12
	Technical area	2,242.26	280	537.14	2,353.29	643	536.17	111.03
Total		1,710.01	5,558	530.36	1,996.86	3,581	598.82	286.85

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

The table of average income shows that women in Humanities are those that have the lowest incomes (1,561 monthly gross Euros). Women in the Technical area, for their part, clearly perceive higher salaries compared to the rest (2,242 monthly gross Euros). The differences in monthly income, therefore, reach up to 680 Euros in the women's collective. Among men the incomes also fluctuate between the Humanities area (1,600 monthly gross Euros) and the Technical area (2,353 Euros).

Table 4.22 shows that the long cycle only has added value in Health Sciences and in the Technical area (doctors vs. nurses, higher engineers vs. technical engineers). However, the short cycle degrees of Social Sciences (like Business Sciences or Teacher) can have more performance than the long cycle degrees (Psychology or Pedagogy, for example).

From a comparative prospect of gender, we observed that, although the differences are always in favour of men, the differences in a same gender by areas are greater than the differences between genders in a same area and cycle.

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[50] For the calculation we have selected the group of full-time employed people. The average has been calculated from the medium point between income intervals; therefore, 1.53 % of the inferior interval (less than 900 euros) and 4.61% of the higher interval (more than 40,000 euros) have been eliminated.

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Table 4.23 shows the results of the monthly gross income by subareas (subset of full-time employed graduates).

Table 4.23 | Average of monthly gross income by subareas (employed full-time)

	Women			Men			Total
	n	Average	Stand. dev.	*n*	Average	Stand. dev.	Diff. Average
Geography and History	72	20.87%	345	56	22.05%	254	1.18%
Philosophy and Humanities	27	25.71%	105	17	23.29%	73	-2.43%
Philologies and Comparative Studies	77	14.10%	546	25	20.49%	122	6.39%
Fine Arts	11	15.94%	69	3	11.11%	27	-4.83%*
Economics, Business Administration and Management and Business Sciences	412	48.47%	850	332	52.20%	636	3.73%
Law, Labour Relations and Political Sciences	348	40.05%	869	148	39.89%	371	-0.15%
Communication and Information Science	98	35.13%	279	32	31.07%	103	-4.06%
Psychology and Education Studies	88	17.60%	500	16	23.88%	67	6.28%
Teacher	119	10.05%	1.184	15	6.70%	224	-3.35%
Tourism	17	36.17%	47	1	16.67%	6	-19.5%*
Chemistry	38	27.94%	136	18	18.95%	95	-8.99%
Biology and Nature	74	21.39%	346	40	23.81%	168	2.42%
Physics and Mathematics	18	18.00%	100	21	19.44%	108	1.44%
Nursing	70	14.23%	492	13	18.31%	71	4.08%
Medicine and Dentistry	7	3.41%	205	6	7.14%	84	3.73%
Pharmacy and Food Science and Technology	56	32.56%	172	14	45.16%	31	12.60%
Veterinary Medicine	9	19.57%	46	5	25.00%	20	5.43%*
Architecture	35	59.32%	59	55	65.48%	84	6.15%
Civil Engineering	28	47.46%	59	72	57.14%	126	9.69%
Nautical Sciences	5	41.67%	12	10	35.71%	28	-5.95%*
Advanced Production Technologies	83	36.73%	226	325	49.85%	652	13.12%
Information and Communication	47	31.76%	148	244	33.94%	719	2.18%
Agricultural	58	38.16%	152	84	46.93%	179	8.77%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

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For subareas we also find differences in favour of men in almost all the cases, some quite surprising, as for example the ones who work eminently in the public area (Teacher, Nursing or Medicine). The income differences in the public area, in equality of degree level, for Teacher, can only be validated to equality of type of working day, contractual situation (internship or government employee) and seniority.

Table 4.24 shows the monthly gross incomes for graduates of one of the six specialities of Teacher (pre-school, primary, foreign, musical language, gymnastics and special education), that work in the public area, at full-time, with a temporary contract (internship), and that state that they do not carry out any kind of management functions.

Table 4.24 | Average of gross salary incomes of qualified teachers who work in the public area, at full-time, with a temporary contract and that do not carry out any kind of management functions

	Average	Standard deviation	*n*
Women	1,570.45	410.13	537
Men	1,744.54	425.69	122

As we observe, even when controlling the degree (teaching), the type of contract, the area and the management functions, there are still differences regarding the response: 174 Euros in favour of men. Like in the income tables in the public area, gender does not vary, we have to deduce that the differences are due to a different perception of the incomes. This situation **generates important doubts on the reliability of this data for an inter-gender comparison**. A further research would be necessary to study in depth the causes of these differences.

Chart 4.7 shows the subareas that are found in the inferior and superior end of the monthly gross salary income.

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Chart 4.7 | Monthly gross income

	Degrees under 1,500 EUR monthly gross income	Degrees over 2,000 EUR monthly gross income
Women	Tourism Veterinary Medicine Geography and History	Advanced Production Technologies Nautical Sciences Information and Communication Architecture Medicine and Dentistry Civil Engineering
Men	Fine Arts	Physics and Mathematics Information and Communication Architecture Advanced Production Technologies Nautical Sciences Medicine and Dentistry Civil Engineering

For women, in three of the 23 subareas do not surpass 1,500 monthly gross Euros, while in six subareas 2,000 Euros are overcome. It is necessary to say, however, that the multiple comparisons do not show a clear pattern of significant differences between themselves.

Indicator 9. Rate of job suitability to university-level functions

This indicator offers information on the percentage of graduates who state to develop university-level functions in their job, with independence of the qualification requirement that was required from them (specific degree, university qualification or any qualifications). It is an indicator to see the educational adjustment of university graduates in their jobs.

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Table 4.25 | Suitability rate of the job according to university-level functions

	Humanities		Social Sciences		Health Sciences		Experimental Sciences		Technical area		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Women	72.32%	1,149	85.89%	3,890	87.61%	589	95.30%	1,043	91.67%	732	85.82%	7,403
Men	65.59%	526	80.55%	1,537	82.73%	388	97.53%	243	90.52%	2,015	84.20%	4,709

Table 4.26 shows an important variability by areas in the percentages of graduate women who carry out university functions: the fork goes from 72.3% in Humanities up to 95.3% in Health Sciences.

This fork is sensitively broadened in the case of men, and continues on having more outstanding results in Humanities and Health Sciences, with 65.6% and 97.5%, respectively.

Table 4.26 | Differences in the suitability rates among the ten groups

	Humanities	Social Sciences	Health Sciences	Experimental Sciences	Technical area
Women	–	=	+	=	+
Men	–	–	+	=	+

As we observe in table 4.26, on the women's row and only in one area (Humanities) there are less graduates than the ones expected carrying out university-level functions. However, being graduated in the areas of Health Sciences or in the Technical area it offers them more possibilities of exercising university-level functions.

For men we find two areas with a significantly negative behavior: Humanities and Social Sciences (in the case of Social Sciences, it is necessary to remember that men have a smaller participation in the education area).

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Table 4.27 | Rate of university-level functions by subareas and by gender

	Women			Men			Total
	n	%	Total	*n*	%	Total	Dif. %
Geography and History	245	66.40%	369	173	62.45%	277	-3.94%
Philosophy and Humanities	75	68.18%	110	49	60.49%	81	-7.69%
Philologies and Comparative Studies	464	78.78%	589	105	77.78%	135	-1.00%
Fine Arts	47	58.02%	81	18	54.55%	33	-3.48%
Economics, Business Administration and Management and Business Sciences	729	83.41%	874	549	80.62%	681	-2.79%
Law, Labour Relations and Political Sciences	742	78.85%	941	330	77.28%	427	-1.57%
Communication and Information Science	242	81.48%	297	89	75.42%	118	-6.06%
Psychology and Education Studies	461	86.33%	534	54	72.97%	74	-13.36%
Teacher	1,138	95.15%	1,196	212	92.58%	229	-2.57%
Tourism	29	60.42%	48	4	50.00%	8	-10.42%*
Chemistry	115	83.94%	137	76	76.77%	99	-7.17%
Biology and Nature	308	87.50%	352	153	86.93%	176	-0.57%
Physics and Mathematics	93	93.00%	100	92	81.42%	113	-11.58%
Nursing	536	94.20%	569	88	95.65%	92	1.45%
Medicine and Dentistry	238	100.00%	238	93	100.00%	93	0.00%
Pharmacy and Food Science and Technology	172	95.03%	181	35	94.59%	37	-0.43%
Veterinary Medicine	48	87.27%	55	21	100.00%	21	12.73%*
Architecture	113	100.00%	113	183	97.86%	187	-2.14%
Civil Engineering	60	98.36%	61	125	95.42%	131	-2.94%
Nautical Sciences	10	83.33%	12	26	92.86%	28	9.52%*
Advanced Production Technologies	207	89.22%	232	648	91.78%	706	2.56%
Information and Communication	136	89.47%	152	659	87.52%	753	-1.96%
Agricultural	145	89.51%	162	183	87.14%	210	-2.36%

* Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

As we observe in table 4.27, there are degrees that guarantee an adequacy of the insertion to the labour market, like Architecture or Medicine and Dentistry, while in others only 6 of every 10 end up carrying out university-level functions (Fine Arts or Tourism).

The behavior of this indicator is more negative for men than for women, except Veterinary Science and Advanced Production Technologies.

Chart 4.8 collects the typology of degrees that have a positive or negative influence on the probability of ending up developing university-level functions.

Chart 4.8 | University-level functions. Summary of results from the contingency table

	Subareas with a lower percentage than expected of graduates that develop university-level job functions	Subareas with a higher percentage than expected of graduates that develop university-level job functions
Women	Geography and History Philosophy and Humanities Philologies and Comparative Studies Fine Arts Law, Labour Relations and Political Sciences Tourism	Teacher Physics and Mathematics Nursing Medicine and Dentistry Pharmacy, Science and Food Technology Architecture Civil Engineering
Men	Geography and History Philosophy and Humanities Philologies and Comparative Studies Fine Arts Economics, Business Administration and Management and Business Sciences Law, Labour Relations and Political Sciences Communication and Information Science Psychology and Education Studies Tourism Chemistry	Teacher Nursing Medicine and Dentistry Architecture Civil Engineering Advanced Production Technologies

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As we can observe, the Humanities degrees, for men as well as for women, show a greater probability of not developing functions that require university studies. In return, the degrees of the education and health area show a high adequacy.

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For men the typology of degrees is a little more determining, in regard to ending up developing university –level functions, than for women.

10. Part-time job rate

The rates of part-time jobs of graduates unlike other indicators of employment quality, like income, university functions, of management, or satisfaction do not entail a univocal evaluation of the employment quality, since our survey does not allow us to know if the decision to work in part-time jobs has been a personal decision or if it has been imposed by the labour market conditions. As a matter of fact, a person can decide to work par- time in order to continue their training, to take care of relatives, to do voluntary jobs, etc; or, however, part-time jobs can be the only option because he/she is not able to find a full-time job or because the one that is offered is not convenient due to the salary, suitability of the functions, location, etc.

 Although there is research in the context of the United States that suggests that the quality of part-time jobs is lower, because they detected that during the periods of economic expansion, employees who normally opt for part-time jobs change to better remunerated full-time jobs (WENGER, 2001), a research carried out in France points out that part-time jobs are not distributed in a homogeneous way among professions and social categories. Thus, Bel (2008) finds that:

■ In the public functions, part-time jobs are, especially, an option.

■ However, part-time jobs in the private sector are concentrated by women and they are low qualified jobs.

Different qualitative studies on working women in France show that a third of these women "suffer" more than they "choose" this job modality. The option to work part-time is often conditioned by the unequal distribution of family tasks and the lack of services and resources that allow the conciliation between the professional life and the family one. Finally, beyond the economic or domestic responsibilities, the author believes that what causes this is also in a high degree in the ideology, like, for example, the insistence that part-time jobs are the ideal form of work for women.

There are important differences in the part-time job rates according to the different areas (see table 4.28). For women, the fork stands between Humanities, where more than one fourth of the total of employed-women work in part-time jobs (26%), and the Technical area, where only 7% of women who work in this area do it in part-time jobs. For men, the fork also fluctuates between 20% in Humanities and 4% in the Technical area.

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Table 4.28 | Part-time job rate by gender and by knowledge area

	Humanities		Social Sciences		Health Sciences		Experimental Sciences		Technical area		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Women	26.08	1,108	11.81	3,836	12.84	514	17.76	1,025	6.75	711	14.43	7,194
Men	20.12	492	7.60	1,513	10.19	324	12.66	237	4.03	1,960	7.87	4,526

Table 4.29 compares the differences in the temporary job rates between the ten categories (five by knowledge area and two by gender). This shows that women in Humanities and Health Sciences have more possibilities to work in part-time jobs than the rest of university graduates, while women in the Technical area have fewer possibilities. Finally, the two remaining groups do not have significant differences regarding the expected behavior.

In the case of men, Humanities continues on showing significantly higher rates of part-time jobs, while the lowest rates are found in the areas of Social Sciences and Technical area.

Table 4.29 | Differences in temporary job rates between the ten groups. Results from the contingency table

	Humanities	Social Sciences	Health Sciences	Experimental Sciences	Technical area
Women	↑	=	=	↑	↓
Men	↑	↓	=	=	↓

Although the fact that there are less men from the ones expected waited in Social Sciences with part-time jobs and more women than those expected in Health Sciences shows that, globally, there are more women than men with this type of working day hours, it would be a simplistic reading to affirm that the presence of part-time jobs is higher for women than for men. Table 4.29 seems to indicate that the behavior is probably due to an interaction between gender and area that the origin degree prepares them for.

Table 4.30 and chart 4.9 reinforce this hypothesis, since it allows us to see that part-time jobs are concentrated in determinate subareas.

Table 4.30 | Part-time jobs by subareas and by gender

	Women			Men			Total
	n	%	Total	*n*	%	Total	Dif. %
Geography and History	74	20.90%	354	41	16.02%	256	-4.89%
Philosophy and Humanities	21	20.00%	105	20	26.32%	76	6.32%
Philologies and Comparative Studies	162	28.47%	569	25	19.53%	128	-8.94%
Fine Arts	32	40.00%	80	13	40.63%	32	0.62%
Economics, Business Administration and Management and Business Sciences	54	6.21%	869	21	3.12%	673	-3.09%
Law, Labour Relations and Political Sciences	83	9.00%	922	35	8.45%	414	-0.55%
Communication and Information Science	47	16.15%	291	16	13.56%	118	-2.59%
Psychology and Education Studies	92	17.69%	520	11	15.28%	72	-2.41%
Teacher	172	14.50%	1.186	31	13.60%	228	-0.91%
Tourism	5	10.42%	48	1	12.50%	8	2.08%*
Chemistry	9	7.03%	128	4	4.76%	84	-2.27%
Biology and Nature	39	13.22%	295	19	13.48%	141	0.25%
Physics and Mathematics	18	19.78%	91	10	10.10%	99	-9.68%
Nursing	127	22.36%	568	17	18.48%	92	-3.88%
Medicine and Dentistry	33	14.35%	230	9	9.78%	92	-4.57%
Pharmacy and Food Science and Technology	11	6.36%	173	3	8.82%	34	2.47%
Veterinary Medicine	11	20.37%	54	1	5.26%	19	-15.11%*
Architecture	13	11.61%	112	11	5.88%	187	-5.72%
Civil Engineering	2	3.57%	56	6	4.84%	124	1.27%
Nautical Sciences	2	16.67%	12	2	7.41%	27	-9.26%*
Advanced Production Technologies	8	3.49%	229	21	3.03%	692	-0.46%
Information and Communication	8	5.37%	149	24	3.32%	723	-2.05%
Agricultural	15	9.80%	153	15	7.25%	207	-2.56%

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

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As we can observe on table 4.30, part-time jobs in women fluctuates between 3% in Advanced Production Technologies and Civil Engineer and 28% of Philology and Compared Studies and 40% of Fine Arts (37 points of difference). However, the differences between men and women reach at most 10 points (for example, in Physics and Mathematics).

Chart 4.9 confirms what was already perceived in the previous table: the part-time jobs are statistically more probable in some subareas than in others. The economic and juridical degrees and some subareas in Technical area show less part-time jobs than the ones expected, for men as well as for women. In return, for Humanities graduates the probability of ending up having a part-time job is higher. Finally, there are some degrees with significant figures for one gender and not for the other one, fact that probably is due to differences in the dimension of the sample of men and women.

Chart 4.9 | Differences between part-time job rates by subareas. Summary of the significant results from the contingency table

	Subareas with a lower percentage than the expected one in graduates who work in part-time jobs	Subareas with a higher percentage than the expected one in graduates who work in part-time jobs
Women	Economics, Business Administration and Management and Business Sciences Law, Labour Relations and Political Sciences Advanced Production Technologies Information and Communication	Geography and History Philosophy and Humanities Philologies and Comparative Studies Fine Arts Communication and Information Science Psychology and Education Studies
Men	Economics, Business Administration and Management and Business Sciences Law, Labour Relations and Political Sciences Chemistry Architecture Civil Engineering Advanced Production Technologies Information and Communication Agricultural	Geography and History Philosophy and Humanities Philologies and Comparative Studies Fine Arts Nursing

Part time jobs are much more usual in the public area for both genders (see table IX of annex IV). On the other hand, the differences between men and women regarding the "selection" of this type of working day jobs are smaller in the public area. Among men we find that the differences are more remarkable: the percentage of men who

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have a part-time job in the public area duplicates the ones in the private area (6 points higher), while in the case of women the differences are smaller (3 percentage points).

Are part-time working day jobs a personal choice or an indicator of the low quality of the insertion in the labour market? We want to discern the answer to this question based on table 4.31.

Table 4.31 | University-level functions rate by working day, gender, knowledge area and public or private

Area		Working day	Women			Men			Total
			n	%	Total	*n*	%	Total	Dif. %
Public	PT	Humanities	110	90.91%	121	39	78.00%	50	-12.91%
		Social Sciences	176	88.00%	200	39	82.98%	47	-5.02%
		Experimental Sciences	30	88.24%	34	14	93.33%	15	5.10%˙
		Health Sciences	80	100.00%	80	13	92.86%	14	-7.14%˙
		Technical area	19	90.48%	21	18	90.00%	20	-0.48%˙
		Total	**415**	**91.01%**	**456**	**123**	**84.25%**	**146**	**-6.76%**
	FT	Humanities	255	79.94%	319	117	71.34%	164	-8.60%
		Social Sciences	1,296	90.19%	1,437	319	81.17%	393	-9.02%
		Experimental Sciences	117	92.86%	126	77	87.50%	88	-5.36%
		Health Sciences	338	96.30%	351	87	98.86%	88	2.57%
		Technical area	125	89.29%	140	247	88.53%	279	-0.76%
		Total	**2,131**	**89.80%**	**2,373**	**847**	**83.70%**	**1,012**	**-6.11%**
Private	PT	Humanities	113	68.07%	166	24	50.00%	48	-18.07%
		Social Sciences	187	74.50%	251	38	55.88%	68	-18.62%
		Experimental Sciences	22	68.75%	32	12	66.67%	18	-2.08%˙
		Health Sciences	94	92.16%	102	14	87.50%	16	-4.66%˙
		Technical area	22	81.48%	27	50	84.75%	59	3.26%˙
		Total	**438**	**75.78%**	**578**	**138**	**66.03%**	**209**	**-9.75%**
	FT	Humanities	313	62.98%	497	131	57.21%	229	-5.77%
		Social Sciences	1,625	83.59%	1,944	820	81.59%	1,005	-2.00%
		Experimental Sciences	273	84.78%	322	154	75.86%	203	-8.92%
		Health Sciences	464	94.31%	492	117	98.32%	119	4.01%
		Technical area	487	93.12%	523	1,458	91.01%	1,602	-2.11%
		Total	**3,162**	**83.70%**	**3,778**	**2,680**	**84.86%**	**3,158**	**1.17%**

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

The table allows us to ascertain that:

■ For every type of working day, in full-time or part-time, the degree of suitability (percentage of graduates that develop university-level functions in their current job) is higher in the public area, with one only exception: for graduates in the Technical area that work in full-time jobs the suitability in the private area seems slightly superior to the one in the public area.

■ Graduates who work in the private area have better suitability if they work in full-time jobs, with one exception: women in Humanities studies show a better suitability in part-time jobs. This percentage is highly influenced by women in the subarea of Philology and Compared Studies, that is, we are probably speaking about translators, correctors or part-time teachers.

■ In return, in the public area, the suitability of part-time jobs is higher in some cases, and lower in others, than full-time jobs.

■ These results confirm what the previously mentioned French study stated at the beginning of this section, in the sense that it is more probable that the election of part-time jobs is due to a personal choice in the public area, while in the private area, rather than an option, it is due to the lack of viable alternatives.

Indicator 11. Occupational Quality Index

The Occupational Quality Index (OQI) integrates four key aspects of the quality of the insertion in the labour market: type of contract (C), remuneration (R), job suitability related to the university studies (A) and satisfaction (S). The integration of these four elements is made in the following way:

$$OQI = f[(C + R + A) * S] * 100$$

This indicator, elaborated by Corominas et al (2007), has a parallel behavior to the other analyzed indicators, which is why we have chosen it, in order to appraise its viability as a summary indicator, and even as a substitute of some of the previous indicators.

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Table 4.32 | Averages of the OQI by knowledge areas

		Average	Stand. dev.	*n*
Women	Humanities	53.74	19.61	892
	Social Sciences	63.09	16.84	3,396
	Experimental Sciences	59.92	16.81	462
	Health Sciences	65.54	15.00	882
	Technical area	67.33	15.89	632
Men	Humanities	51.69	21.36	415
	Social Sciences	63.90	17.81	1,341
	Experimental Sciences	60.90	17.02	295
	Health Sciences	67.72	14.59	211
	Technical area	69.55	15.65	1,783

As we observe, there is an adjustment of the OQI: the averages of the Technical area and Health Sciences are the highest; followed by Social Sciences and Experimental Sciences; and, finally, Humanities is the one that presents the lowest averages.

This described behavior could summarize, regarding the areas, the behavior of the previous indicators, which makes us defend the utility of this index as a summary indicator.

Table 4.33 shows the OQI averages by subareas. As we can see, the OQI varies much more in a gender by subareas (with differences that reach up to 25 percentage points for women and 29 for men) than between genders in a same subarea.

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Table 4.33 | OQI averages by subareas

	Women			Men			Total
	n	Ave.	Stand. dev.	*n*	Ave.	Stand. dev.	Ave. Diff.
Geography and History	280	50.85	21.10	219	49.59	21.02	-1.26
Philosophy and Humanities	85	51.63	20.56	60	49.60	23.98	-2.04
Philologies and Comparative Studies	466	56.54	17.89	113	58.29	19.71	1.75
Fine Arts	61	48.50	20.84	23	44.69	18.79	-3.81*
Economics, Business Administration and Management and Business Sciences	807	66.00	17.04	602	66.68	17.39	0.68
Law, Labour Relations and Political Sciences	796	61.39	18.33	364	62.80	19.57	1.41
Communication and Information Science	250	58.40	18.31	102	56.46	18.38	-1.93
Psychology and Education Studies	467	59.98	16.88	60	58.33	16.63	-1.65
Teacher	1,032	65.13	14.04	205	63.52	13.48	-1.60
Tourism	44	52.34	18.15	8	50.58	20.05	-1.76*
Chemistry	117	62.99	16.58	75	63.09	14.78	0.09
Biology and Nature	259	57.73	17.18	127	59.72	18.09	1.99
Physics and Mathematics	86	62.33	15.09	93	60.76	17.22	-1.57
Nursing	481	63.32	15.13	80	63.22	14.16	-0.11
Medicine and Dentistry	205	71.64	13.38	86	73.54	13.53	1.90
Pharmacy and Food Science and Technology	150	66.78	14.14	29	64.66	15.09	-2.13*
Veterinary Medicine	46	57.43	14.04	16	64.53	11.48	7.10*
Architecture	101	73.29	10.62	168	74.25	13.46	0.96
Civil Engineering	51	73.64	11.98	115	74.22	14.74	0.58
Nautical Sciences	11	62.46	23.26	22	71.51	14.47	9.05*
Advanced Production Technologies	208	65.38	16.98	627	70.86	15.11	5.48
Information and Communication	136	68.70	14.94	658	67.83	15.90	-0.87
Agricultural	125	62.12	16.86	193	64.05	16.54	1.93

*Note: It is necessary to play down the interpretation of this data because of the low frequency (n < 30) of people in this category.

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The differences are too small to detect groups that exclude themselves among others in the multiple comparisons. The OQI, therefore, does little discrimination, which is coherent, because globally the quality of the insertion in the labour market is high. It is also true that the fact that satisfaction has such a high weight that it homogenizes the results.

Chart 4.10 collects the ends of the OQI distribution.

Chart 4.10 | Subareas with an OQI inferior to 60 or superior to 70

	OQI inferior to 60	OQI superior to 70
Women	Geography and History	Medicine and Dentistry
	Philosophy and Humanities	Architecture
	Philologies and Comparative Studies	Civil Engineering
	Fine Arts	
	Communication and Information Science	
	Psychology and Education Studies	
	Tourism	
	Biology and Nature	
	Veterinary Medicine	
Men	Fine Arts	Medicine and Dentistry
	Geography and History	Architecture
	Philosophy and Humanities	Civil Engineering
	Tourism	Advanced Production Technologies
	Communication and Information Science	Nautical Sciences
	Philologies and Comparative Studies	
	Psychology and Education Studies	
	Biology and Nature	

By subareas, the behavior is similar to the one described in previous indicators: Humanities degrees show a higher negative behavior than the Health Sciences and Technical area degrees.

4.2 Summary of the indicators by subareas and by gender

Along what we previously described we have seen that the selected indicator's behavior of quality of the insertion in the labour market is heterogeneous, according to the typology of degrees, and that the differences by gender for the typology of degrees are small and, when there are differences, they are not systematically negative towards women.

From the previous analysis, we have decided to eliminate the satisfaction indicator from the table of indicators, because it does not distinguish the quality of the labour market insertion, and we have also eliminated the inactivity rate for family reasons, because of its low incidence in the studied population. We have maintained the income indicator, in spite of its scarce reliability when comparing men and women, because we believe that in women and in men it can have a guidance value.

The following tables show, in a graphical way, the behavior of the subareas for the nine remaining indicators. The objective is that future students can have an idea of the possibilities of the degrees they choose, regarding the quality of the labour market insertion, only as a general idea.

Colour blue in bold (with independence from the arrow direction) indicates a negative behaviour regarding the quality of the labour market insertion, while the **light blue circle** indicates a positive behaviour

The meaning of each symbol is explained in the following chart:

Employment rate[51]	↑	Significantly higher than expected
	↓	Significantly lower than expected
	≈	There is no differences between the observed and expected frequency
Unemployment rate[52]	↑	Significantly higher than expected
	↓	Significantly lower than expected
	≈	There is no differences between the observed and expected frequency
Income	↑	More than 2,000 EUR monthly gross income
	↓	Less than 1,500 EUR monthly gross income
	≈	Between 1,500 and 2,000 EUR monthly gross
OQI	↑	OQI superior to 70
	↓	OQI inferior to 60
	≈	OQI between 60 and 70

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[51] The same logic is applied for the stability rate of stability (permanent contract), the managment functions rate and the suitability rate (people who develop university-level functions).

[52] The same logic is applied to the temporality rate and the part-time job rate.

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Women

	Employment rate	Unemployment rate	Permanent contract rate	Temporary contract rate	Management functions rate	Income	University-level functions rate	Part-time job rate	OQI
Geography and History	↓	↑	↓	↑	↓	↓	↓	↑	↓
Philosophy and Humanities	↓	↑	≈	≈	≈	≈	↓	↑	↓
Philologies and Comparative Studies	↓	↑	↓	↑	↓	≈	↓	↑	↓
Fine Arts	↓	↑	↓	↑	↓	≈	↓	↑	↓
Economics, Business Administration and Management and Business Sciences	(↑)	(↓)	(↑)	(↓)	(↑)	≈	≈	(↓)	≈
Law, Labour Relations and Political Sciences	↓	≈	≈	≈	(↑)	≈	↓	(↓)	≈
Communication and Information Science	↓	≈	≈	↑	≈	≈	≈	↑	↓
Psychology and Education Studies	≈	≈	↓	↑	↓	≈	≈	↑	↓
Teacher	(↑)	(↓)	↓	↑	↓	≈	(↑)	≈	≈
Tourism	≈	≈	(↑)	≈	≈	↓	↓	≈	↓
Chemistry	↓	≈	(↑)	≈	≈	≈	≈	≈	≈
Biology and Nature	↓	≈	↓	↑	↓	≈	≈	≈	↓
Physics and Mathematics	≈	≈	≈	≈	↓	≈	↑	≈	≈
Nursing	≈	≈	↓	↑	↓	≈	(↑)	↑	≈
Medicine and Dentistry	(↑)	≈	↓	↑	↓	(↑)	(↑)	≈	(↑)
Pharmacy and Food Science and Technology	≈	≈	(↑)	(↓)	≈	≈	(↑)	≈	≈
Veterinary Medicine	≈	≈	≈	≈	≈	↓	≈	≈	↓
Architecture	(↑)	≈	↓	(↓)	(↑)	(↑)	(↑)	≈	(↑)
Civil Engineering	≈	≈	≈	≈	(↑)	(↑)	(↑)	≈	(↑)
Nautical Sciences	↓	≈	≈	≈	≈	(↑)	≈	≈	≈
Advanced Production Technologies	≈	≈	(↑)	≈	≈	(↑)	≈	(↓)	≈
Information and Communication	≈	≈	(↑)	(↓)	≈	(↑)	≈	(↓)	≈
Agricultural	↓	≈	≈	↑	(↑)	≈	≈	≈	≈

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Men

	Employment rate	Unemployment rate	Permanent contract rate	Temporary contract rate	Management functions rate	Income	University-level functions rate	Part-time job rate	OQI
Geography and History	↓	↑	↓	≈	↓	≈	↓	↑	↓
Philosophy and Humanities	↓	↑	≈	≈	≈	≈	↓	↑	↓
Philologies and Comparative Studies	≈	≈	↓	↑	↓	≈	↓	↑	↓
Fine Arts	≈	≈	↓	≈	≈	↓	↓	↑	↓
Economics, Business Administration and Management and Business Sciences	≈	≈	(↑)	(↓)	(↑)	≈	↓	(↓)	≈
Law, Labour Relations and Political Sciences	≈	↑	≈	(↓)	(↑)	≈	↓	(↓)	≈
Communication and Information Science	≈	≈	↓	↑	≈	≈	↓	≈	↓
Psychology and Education Studies	≈	↑	≈	≈	≈	≈	↓	≈	↓
Teacher	≈	≈	↓	↑	↓	≈	(↑)	≈	≈
Tourism	≈	≈	≈	≈	≈	≈	↓	≈	↓
Chemistry	≈	≈	≈	(↓)	↓	≈	↓	(↓)	≈
Biology and Nature	≈	≈	↓	≈	≈	≈	≈	≈	↓
Physics and Mathematics	≈	≈	↓	≈	↓	(↑)	≈	≈	≈
Nursing	≈	≈	↓	≈	≈	≈	(↑)	↑	≈
Medicine and Dentistry	(↑)	≈	≈	≈	↓	(↑)	(↑)	≈	(↑)
Pharmacy and Food Science and Technology	≈	≈	≈	≈	(↑)	≈	≈	≈	≈
Veterinary Medicine	≈	≈	≈	≈	≈	≈	≈	≈	≈
Architecture	(↑)	≈	↓	(↓)	(↑)	(↑)	(↑)	(↓)	(↑)
Civil Engineering	≈	≈	(↑)	(↓)	(↑)	(↑)	(↑)	(↓)	(↑)
Nautical Sciences	≈	≈	≈	≈	≈	(↑)	≈	≈	(↑)
Advanced Production Technologies	(↑)	≈	(↑)	(↓)	(↑)	(↑)	(↑)	(↓)	(↑)
Information and Communication	≈	≈	(↑)	(↓)	(↑)	(↑)	≈	(↓)	≈
Agricultural	≈	≈	↓	≈	(↑)	≈	≈	(↓)	≈

5

PREDICTIVE VARIABLES FOR OCCUPATIONAL QUALITY RATE IN WOMEN GRADUATES

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5. PREDICTIVE VARIABLES FOR OCCUPATIONAL QUALITY RATE IN WOMEN GRADUATES

The objective of our proposal comes from the need to analyze the model of female insertion in the labour market and the variables associated with their quality insertion, unwilling to propose measures to equal the male model, but willing to have a precise knowledge of the degree in which the foreseen variables in our study have an influence on the quality of their insertion in the labour market.

There is very little research that focus on the female gender and that analyzes the influence of determinate variables in relation to the results of the same feminine insertion. For this reason, in this chapter, the reference of population of the analysis is not the whole of graduates, but the polled women collective. In this way, we avoid the major approach found in the bibliography from the gender that takes as the initial point of reference the analysis or the confirmation of the "discriminatory" situation between men and women.

So, in this chapter we will analyze which are the differential variables associated with a quality insertion in the labour market, analyzed regardless of their homologous group of men graduates.[53]

We have taken three groups of predictive variables related with the study to analyze the differences of the OQI[54] between the women's graduate collective. The variables have been classified into: variables that collect information on the access to

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[53] As we commented in chapter 3, it is decided to eliminate 217 graduates from the analysis whose access origin is a diploma or a previous degree to the study degrees. This decision is taken when it is observed that the average of the OQI for this collective of graduates (66.3%) is much higher than for the rest of graduates who come from another itinerary. Since we can not know if their occupational quality is due to the study degrees or to their previous degrees, they could skew the results of the analysis and it is decided not to take them into consideration. Moreover, those who present an OQI inferior to 25% have also been neglected which is explained in this chapter. 5,517 women, who share disciplinary areas in the following way, are the reference population for this chapter:

Knowledge area	Graduates of 2004	
Humanities	755	13.7%
Social Sciences	3,030	54.9%
Experimental Sciences	432	7.8%
Health Sciences	715	13.0%
Technical area	585	10.6%
Total	5,517	100%

[54] In chapter 4 we describe the Occupational Quality Index (OQI).

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university, variables of progress at university and variables that can bring added value to the OQI.

In table 5.1 we find the description of the variables.

Table 5.1 | Description of the different variables

Entry variables	
Social and economic status	Indicator based on the educational level of the graduate's parents
Access grade	University access grade
Access itinerary	Itinerary through which he/she got access to university
Progress at university variables	
Area	Knowledge area of the degree
Job record	Job during the degree and relation between the studies and the job
University record	Academic record grade with which he/she finishes the studies
Studies mobility	Indicator of mobility during the studies
Added value variables	
Continuation of studies	Indicator that shows if once the degree is finished he/she continues on studying
Job mobility	Indicator that shows any mobility in their job

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The models that we next show intend to analyze if the variables on table 5.1 have any influence on the occupational quality (collected through the OQI) and, if they do, in which degree.

Entry variables	
Progress variables	→ Occupational Quality Index
Added value variables	
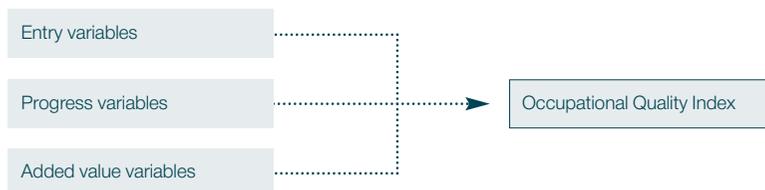
As all variables are referenced to aspects and actions previous to the employment, the results will show the degree in which the quality of the final insertion (variability of OQI) is a "debtor" of these characteristics or previous actions. We attempt to explain what is associated the variability of the OQI, based on the conditions or previous characteristics with which they access in the job world. It is obvious that, the quality of the job in the moment of the survey will be much more related with characteristics of this job (suitability, satisfaction, necessary competences to develop it, factors that were taken into account when in the recruitment) than with elements that do not describe the current job and that are previous temporarily.

In order to facilitate the model's interpretation of results and coefficients, the centered variables have been used. For more information, see annex V.

5.1 Technical analysis

The quantitative studies on gender and insertion in the higher education are normally based on official and exhaustive data bases (THEWLIS et al., 2004; MILLER et al., 2004) and, therefore, they have a high reliability (for example, coming from the Treasury or from the Labour Department); or in official surveys of extense scope, like the survey of active population or EPA (ALBERT, 2000; CASQUIER, URIEL, 2007). In other cases data from research with a more concrete segments of the population (CHEVALIER, 2007), are used, as the case of this study.

The methodology used is mostly quantitative, although we do find studies where the quantitative and qualitative approaches (MOREAU, LEATHWOOD, 2006) are combined. Regarding the quantitative methodology, it can be descriptive (MARTÍNEZ et al., 2007; CHEVALIER, 2002; BRENNAN, SHAH, 2003) or explanatory. In the explanatory models we find the following:

- The family of the linear models generalized (logit, probit, etc.) (RAHONA, 2009; JOY, 2003).

- Traditional models of regression (COROMINAS et al., 2007).

- The multilevel models with longitudinal data (FULLER, 2005).

The multilevel models or hierarchical models are designed to analyze hierarchical structured data. This type of models they propose a structure of analysis in which different group levels can be recognized: the basic level is usually called *micro level* or first level and it is where we can find the observations or individuals, while the higher levels correspond to the *macro level*.

This typology of models has often been applied to the area of primary education (SANDOVAL, 2004; PARDO et al., 2007; MURILLO, 2008), because in the educational area the data to analyze are organized, in a natural way, in hierarchies (child, class, school, neighbourhood, population, state...). The hierarchy replies to the idea that people who belong to a same group share a set of characteristics that favour the homogeneity among the observations and, therefore, they break the basic supposition of the general linear model: the independence among observations.

In our case, we want to know which explanatory variables have an influence on the variability of the OQI and the percentage of variability that each one of these variables has. Like the hierarchical structure of the graduate's collective (that is, in a same typology of degrees −subarea−[55] there is more homogeneity between themselves than with the graduate's population in other degrees), this circumstance breaks the hypothesis of independence in the individuals analysis necessary for the traditional models of regression, and as the dimension of the sample is sufficient for these units of analysis, we believe that the hierarchical models of variance or multilevel models are the most powerful to explain the occupational quality.

Thus, in our analysis, the graduates shape the first level or micro level, while the macro level corresponds to the subareas of study.

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[55] As we commented in the the methodological chapter, before reaching this conclusion, one has to take into consideration the subarea of belonging to the university as a macro level, but it is observed that the influence of the university is not significant for the differentiation of subareas. Thus, it is concluded that the subarea alone explains a higher percentage of variability of the OQI than if the university to which they belong is considered.

The process of estimation has been the following:

■ Firstly, we will deem the null model, where we will attempt to find out if part of the variability of the insertion quality in the labour market (measured by the OQI) can be explained because graduates come from different typology of studies.

■ In model 1 we will introduce a variable (the knowledge area) to explain the causes of the differences between the several subareas.

■ Starting from model 1 we will introduce the explanatory variables in table 5.1,[56] in order to determine which characteristics do women have to have in the university system, in each one of these stages, to be able to achieve a good OQI; or, to know what they should do or which previous requirements they should have from the beginning to end up achieving a good employment quality.

Thus, separately for each of these groups, we have kept on introducing progressively the different explanatory variables as fixed effects, that is, we attempt to establish if there is a relationship between the explanatory variable and the OQI for any subarea (if, for example, the access grade to the university is related with the quality of the final insertion in the labour market). Once we obtain the best model of fixed effects, we have introduced the random effects,[57] which attempt to find out if the influence of this variable is different according to the subareas (if, for example, in a subarea the access grade is important, but it is not in another one, or if it leads in the contrary direction). We will only introduce the model which better conforms to the data. Such as:

■ Model 2 includes the entry variables.

■ Model 3 analyzes the influence of the progress variables.

■ Model 4 analyzes the influence of the added valour variables.

Finally, model 5 analyzes the global model with the total of explanatory variables.

In the "Results discussion" section we analyze the global results of the analysis technique and we compare the models to know which one works better (from the amount of explained variability and the number of variables).

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[56] In this classification, we have included the variables that have hypothetically brought an extra value in the labour market insertion quality but the variables that describe the job are not taken into account.

[57] The model will include the random effect of the variable, whenever the estimated parameter is statistically significant (p-value < 0,05). That is, if it is significant, implying that the slope of regression between the OQI and the explanatory variable varies among the different subareas of study; contrarily, if the random parameter is not statistically significant, the slope is constant for all the subareas of study.

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M0. Estimating forward procedure

The objectives of the null model are:

■ Giving answer to the question: are there differences in the medium OQI of the subareas?

■ To know which percentage of the total variability of the OQI of women is explained by the differences between the graduates of the different groups of the second level, that is, from the subareas.

Before, however, it is useful to know the distribution of the OQI according to the different subareas. Figure 5.1 shows this distribution.

Figure 5.1 | Box plot of the OQI by subareas of degrees
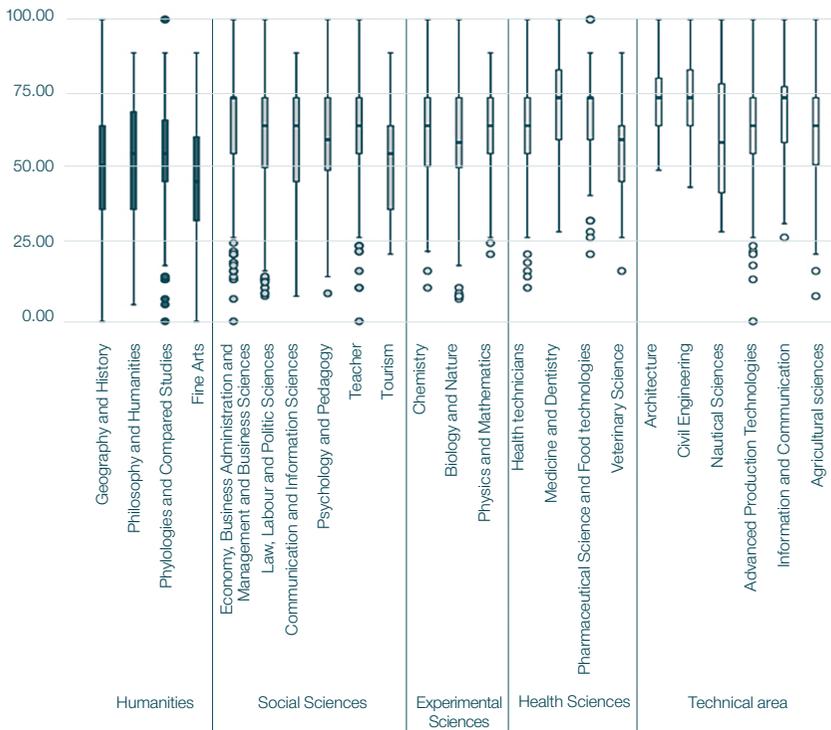
We observe that the average and the variance of the OQI of women differ according to the studies subarea. The highest averages correspond to the following subareas: Medicine and Dentistry, Architecture, Civil Engineer and Advanced Production Technologies, while the lowest correspond to Humanities subareas such as Fine Arts, Geography and History, and Philosophy and Humanities.

Regarding the variability of the subarea averages, we observe that more or less all subareas have a very similar variability, even though there are some subareas with more variability than others (refer to Humanities degrees vs. Technical area degrees).

It is necessary to notice the amount of atypical values observed for each of the studies subareas. The atypical values correspond to people who, regarding the degree variable, are very far off from the rest of the set data and, therefore, far from the variable's distribution. If we considered people with atypical values in the analysis, the results would be highly influenced and, consequently, would not be reliable. In the previous figure we see, approximately, that all the atypical values of the OQI correspond to values under 25%.[58] Thus, we decided to eliminate women who present a lower than 25%[59] OQI from the analysis.

In short, there is so much variability among the averages of the subareas regarding the global OQI average, like, in each subarea, a variation of the people around the average of their subarea.

As it has been commented at the beginning of this chapter, our objective will be to collect this variability with the proposed explanatory variables. However, before working with the explanatory variables, we will estimate the simplest model, also called null model, which does not include any variable and is useful to know which percentage of the total variability of the OQI is due to the differences between the studies subareas.

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[58] Refer to the OQI's box plot in annex VI.

[59] In annex VII we characterize this collective.

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Table 5.2 shows the estimations obtained from this model.

Table 5.2 | Model of the variance of random effects

Occupational Quality Index	Parameter	Standard error	t / Wald statistic[60]	p-value
		Fix effects		
Constant	63.35	1.13	55.89	0.000
		Random effects		
Residual (σ_e^2)	221.62	4.22	52.4	0.000
Subareas ($\sigma_{\mu_0}^2$)	27.13	9.03	3.00	0.003

The results of the table allow us to affirm that the population value of the constant or intersection of the model is different of zero (p-value < 0,05), which indicates that the OQI average of the graduate's population is higher than zero.

In the estimations of the parameters of covariance we find: the variance of the subarea factor ($\sigma_{\mu_0}^2 = 27.13$), which indicates how much the average of the OQI varies between the studies subareas, and the residual variance ($\sigma_e^2 = 221.62$), that indicates how much the individual's OQI dependent variable OQI varies, in each study subarea of study, with respect to the average.

Thus, the variability between the subareas is highly significant, which allows us to explain part of the total variability of the OQI in women. This percentage represents 10.91% of the total variation or, it is to say, 10.91%[61] of the total variability of women is given by the differences of the OQI between the subareas of each study.

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[60] The t statistic responds to the hypothesis contrast that if the estimation of the parameters of fixed effects are different to zero. The Wald statistic contrasts the estimations of the covariance parameters.

[61] Calculation based on the intraclass correlation coefficient intraclass (ICC), which represents the degree of existing variability among the different subareas in comparison with the total variability.

Once we know that:

1. Women's OQI is not the same in all the subareas of study (significant variation between subareas) and

2. Women also present, in each subarea, a significant variation with respect to the average of the OQI of the subarea,

We need to find out which factors or co variables help us to explain these differences, either among the subareas or among women in the same subarea.

Before, however, we face the hypothesis that the differences found in the OQI averages of the different studies subareas are given by the fact that the degrees in which students graduate belong to concrete knowledge areas: Humanities, Social Sciences, Experimental Sciences, Health Sciences and Technical area. Like we have seen before in figure 5.1, it seems that the subareas of Humanities are those that present a lower average, but have more variability with respect to the rest of subareas.

For this motive, and before carrying out the estimation of the different models, we will introduce the variable area of study at the second level of analysis, in order to reduce the variability which is not explained by the differences between the subareas.

M1. Model with co variation area according to differences among the selected subareas of study

Table 5.3 collects the results in the estimation of the model while introducing the variable of knowledge area to explain the differences between the subareas of studies.

When introducing the explanatory variable knowledge area at the second level, what we do is predict the average of the OQI of each subarea from the knowledge area of its graduates. In this case, we will be able to value which is the effect of the subarea factor, once we control the area effect, and if it still has differences between the subareas.

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Table 5.3 | Model with the variable area at the second level

Occupational Quality Index	Parameter	Standard error	t / Wald statistic	p-value
Fix effects				
Constant	56.31	1.88	29.92	0.000
Technical area	12.05	2.48	4.85	0.000
Health Sciences	9.56	2.65	3.60	0.002
Experimental Sciences	5.75	2.85	2.01	0.062
Social Sciences	6.46	2.39	2.69	0.017
Humanities	-	-	-	-
Random effects				
Residual (σ_e^2)	221.66	4.22	52.40	0.000
Subareas ($\sigma_{u_0}^2$)	12.02	5.01	2.39	0.017

The knowledge area is significant when explaining the OQI average among subareas, except the area of Experimental Sciences, that borders the limit of non significant.

Thus, graduates from the Humanities area obtain a medium OQI of 56.31% (see table 5.2).[62] If we study the estimation of the rest of coefficients, we see that all of them have a positive sign. The interpretation is the one that follows.

Women graduates from the Humanities area are those that present a lower OQI compared to the rest. The women graduates with a higher quality index are those in the Technical area, with an increase of 12.05 percentage points compared to the reference percentage, followed by those in Health Sciences, with an increase of 9.56 percentage points. Women graduates of Social Sciences and Experimental Sciences we obtain an increase of near 6 percentage points.

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[62] For the estimation of the model's coefficients, the software fixes a category of the independent or explanatory variable that we call reference category. Thus, the rest of coefficients for the rest of categories are estimated from this reference category. In this case, for the variable of knowledge area is fixed as a reference category the Humanities area.

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We now interpret the results obtained in the variance decomposition. If we compare the results obtained from M1 model with those from the null model (M0), we observe that the residual variance, σ_e^2, is practically equal in both models, which indicates that the variability of level 1 (variability of the OQI in women graduates for each subarea) has not been affected by the fact of having included the knowledge area variable in the second level. However, the variability among the subareas, $\sigma_{\mu_0}^2$, has been considerably reduced (from 27.13 to 12.02).

This result indicates that a good part of the differences of the OQI between the subareas has been explained by the knowledge area variable. Even so, there is still a part that has not been explained.

To quantify which percentage of the differences between the subareas is due to the knowledge area, we need to firstly interpret the interclass correlation coefficient (ICC) of model M1.

The ICC allows us to determine which proportion of the total variability is still due to the difference between the subareas once we have controlled the effect attributable to the knowledge area variable. Thus, for model M1 we obtain an ICC = 5.1 %, figure that implies that, after having controlled the effect of the knowledge area, 5.1% of the total variance of the OQI still corresponds to the existing difference between the studies subareas.

At this point, we can know the percentage of variability explained in level 2:

$$\frac{\sigma_{\mu\ M0} - \sigma_{\mu\ M1}}{\sigma_{\mu\ M0}} = \frac{27.13 - 12.02}{27.13} = 0.5569$$

55.7% of the observed differences between subareas (differences in the OQI average by subareas) are attributable to the Knowledge area.

M2. Estimations according to the university

We remind you that these variables are the access grade university, the parent's educational level and the access itinerary to university.

The procedure that has been followed is the next: starting from the M1 model (with the knowledge area as an explanatory variable at the second level, since it reduces in 56% the differences between subareas), we have added, at an individual scale, each one of these variables.

Once we have estimated the new model, we have checked, through the deviance contrast, if the new variable improved the adjustment of the previous model.

Before, however, it is necessary to say that the parameters have been estimated, for each of the access to university variables, as random effects, meaning that the regression slope between the OQI and the explanatory variables varied according to the subarea of studies of the graduates. Once this estimation was done, we observed that the coefficients of random effects, that is, the variance coefficients, were not statistically significant, which made us conclude that, even though the average of the OQI varies according to the subarea, there is the same regression slope between the OQI and the explanatory variables for each one of them.

Table 5.4 collects the results obtained from the improved adjusted model.

Table 5.4 | Model with explanatory variables with information on university access

Occupational Quality Index	Parameter	Standard error	*t* / Wald statistic	*p*-value
Fix effects				
Constant	51.62	2.19	23.53	0.000
Technical area	12.50	2.72	4.58	0.000
Health Sciences	10.71	2.89	3.69	0.002
Experimental Sciences	6.03	3.11	1.93	0.071
Social Sciences	7.13	2.62	2.71	0.016
Humanities	-	-	-	-
Access grade	0.95	0.25	3.72	0.000
Parent's educational level	0.32	0.15	2.04	0.041
A-level itinerary	3.20	0.79	4.04	0.000
Random effects				
Residual (σ^2_e)	209.19	4.50	46.44	0.000
Subareas ($\sigma^2_{\mu_0}$)	14.44	5.89	2.45	0.014

We now interpret the coefficients of fixed effects.

Women graduates from the Humanities area are those that show a lower OQI (51.62%). In the other end, and decline ordered according to the estimation of the average OQI, we would have the women graduates of the Technical area (64.12%), of Health Sciences (62.33%), of Social Sciences (58.75%) and, finally, those of Experimental Sciences (57.65%). However, to this result or estimation, we have to add the result obtained for each of the three accesses to university co variables: the value of the coefficient associated with each of the three co variables is statistically significant, which confirms that the OQI is related to the grade of access, the parent's educational level and the access itinerary.

Thus, for each point that the access grade increases, the OQI does it in 0.95 percentage points. The same happens with the parent's educational level: an increase in this category implicates an increase of 0.32 percentage points in the OQI. Finally, the fact that the itinerary to enter university is from an A-level implicates an increase of 3.2 percentage points in the OQI.

Regarding the interpretation of the random effects, the estimation of the variability among the subareas has diminished with respect to the one in the null model (from

27.13 to 14.44) and the residual variance has gone from 221.62 in the null model to 209.19. Therefore, in controlling the effect of the knowledge area, the access grade, the parent's educational level and the itinerary to university, we manage to reduce the variability between the subareas in 46.77% or, what would be the same, the estimated model explains the 46.77% of variability of the average OQI between subareas of studies.

Thus, once we have controlled the attributable effect to the access grade, the parent's educational level and the itinerary to university, 6.4% of the total variability of the OQI still corresponds to the differences between the subareas of studies.

The model in formula looks like this:

$$\hat{OQI}_{ij} = 51.62 + 12.50*\text{Technical} + 10.71*\text{Health} + 6.03*\text{Experimental S.} + 7.13*\text{Social S.}$$
$$+ 0.95*\text{access grade} + 0.32*\text{parent's educational level} + 3.20*\text{A-level} + (u_{0j} + e_{ij})$$

In this model, the regression coefficients are constants for any knowledge area. Only the random part is modified, that is, the variability of the person i in the j subarea with respect to the average of its subarea.

Let's put an example for a clearer interpretation. We suppose that a woman graduate in the area of Social Sciences, with an access grade of 7.5 (the centered value and the one we will use in its forecast is 0.72) and with parents who both have higher education studies (centered value equals 4).

The ranks of values of the OQI that this woman graduate can take with this access to university conditions are:

$$[\hat{OQI}_{ij} \pm 1.96*\sqrt{\sigma^2_{\mu_s}}] = 51.62 + 7.13*\text{Social Sciences} + 0.95*0.72 + 0.32*4 + 3.20*\text{A-level} =$$
$$(51.62 + 7.13 + 0.68 + 1.28 + 3.20) \pm 1.96*\sqrt{14.44} = 63.91 \pm 7.45 = [56.46\% ; 71.36\%]$$

A graduate with these access conditions at university will obtain a rank in the OQI between 56.46 and 71.36%.

M3. Estimations according to university progress

In this model we use the explanatory variables classified as variables of university progress: employment records, mobility during the studies and qualification of the degree.

The procedure has been the same than with the previous model. Table 5.5 collects the results obtained from the improved adjusted model.

Table 5.5 | Model with explanatory variables of university progress

Occupational Quality Index	Parameter	Standard error	t / Wald statistic	p-value
Fix effects				
Constant	56.51	1.81	31.11	0.000
Technical area	10.97	2.38	4.60	0.000
Health Sciences	8.98	2.53	3.54	0.003
Experimental Sciences	5.69	2.72	2.08	0.054
Social Sciences	5.64	2.28	2.46	0.027
Humanities	-	-	-	-
Degree-relate-job	2.66	0.46	5.73	0.000
Non-degree-related jobs	-2.62	0.54	-4.86	0.000
Full-time student	-	-	-	-
Degree	2.10	0.57	3.65	0.000
Random effects[63]				
Residual (σ_e^2)	217.51	4.15	52.33	0.000
Subareas ($\sigma_{\mu_0}^2$)	10.82	4.60	2.34	0.019

The estimated coefficient for the mobility variable during the studies is not statistically different to zero (p-value > 0,05). Therefore, the variable is eliminated from the model.

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[63] The coefficients of random effects have also been estimated for these variables. These coefficients were not statistically significant. Thus, the straight line of regression between the IQO for each subarea is the same, and there is only a variation of the individual on the average IQO of its subarea.

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We begin interpreting the part of fixed effects. The coefficient of the area of Experimental Sciences is not statistically significant, even though it borders the value of signification. For the rest of variables, the obtained coefficient is significantly different to zero. The interpretation is the next.

The women graduates of Humanities who were full-time students obtain an average OQI of 56.51%. If the knowledge area is modified, the OQI increases from 11 percentage points for the Technical area up to 5.6 percentage points for Experimental Sciences or Social Sciences.

However, let's center the result with the rest of variables. We observe that combining studies and work can modify the OQI positively or negatively, depending on the relation between the job and the studies.

The coefficients obtained for "Degree-relates-job" and "Non-degree-related-studies" are practically identical but with the contrary sign: combining studies and a job related with the degree increases the occupational quality in 2.6 percentage points; however, to combine studies and work with a job that is not related to the degree reduces, in the same amount, the quality of the insertion in the labour market.

To combine the studies with a job related to the degree improves the OQI, but it is preferable to be a full-time student than to combine studies with a job that is not related to the degree.

The last coefficient of the part of fixed effects is the one obtained with the academic record grade: for each point that the university academic record increases, the OQI increases in 2.1 percentage points.

The results on the part of random effects are very similar to the previous ones: the estimation of the variability between the subareas has diminished with respect to the one of the null model (from 27.13 to 10.82) and the residual variance has gone from 221.62 in the null model to 217.51. Therefore, controlling the effect of the area, of the work antecedents between studies and work and the grade of the academic record, we achieve that the estimated model explains the 60.11% variability of the average OQI among subareas of studies.

The model in formula is the following:

$$OQI_{ij} = 56.51 + 10.97*\text{Technical} + 8.98*\text{Health S.} + 5.69*\text{Experimental S.} + 5.64*\text{Social S.} + 2.66*\text{degree-related-job} + (-2.62)*\text{non-degree-related-job} + 2.10*\text{grade} + (u_{0j} + e_{ij})$$

As in the previous model, the regression coefficients are constants for any knowledge area. Only the random part modifies, that is, the variability of the individual i and the subarea j with respect to the average of its subarea.

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As before, we will put an example of estimation, but differentiating between full-time students, student with degree-related-job, and student with non-degree-related-job. Thus, suppose we want to estimate the OQI for a woman graduate in the area of Social Sciences with a grade of 2.80 (centered value equals 1.11).

The value ranks of the OQI that this graduate can take, for each one of the three situations, are:

■ **Full-time student**

$$[\hat{OQI}_{ij} \pm 1.96 * \sqrt{\sigma_{\mu_0}^2}] = (56.51 + 5.64 * Social\ S. + 2.10 * grade) \pm 1.96 * \sqrt{10.82} =$$
$$(56.51 + 5.64 + 2.10 * 1.11) \pm 1.96 * \sqrt{10.82} = 64.48 \pm 6.45 = [58.03\% ; 70.93\%]$$

■ **Student with degree-related-job**

$$[\hat{OQI}_{ij} \pm 1.96 * \sqrt{\sigma_{\mu_0}^2}] = [(56.51 + 5.64 * Social\ S. + 2.66 * degree\text{-}related\text{-}job + 2.10 * grade) \pm$$
$$1.96 * \sqrt{10.82}] = [(56.51 + 5.64 + 2.66 + 2.10 * 1.11) \pm 1.96 * \sqrt{10.82}]$$
$$= [67.41 \pm 6.45] = [60.69\% ; 73.59\%]$$

■ **Student with non-degree-related-job**

$$[\hat{OQI}_{ij} \pm 1.96 * \sqrt{\sigma_{\mu_0}^2}] = [(56.51 + 5.64 * Social\ S. - 2.62 * non\text{-}degree\text{-}related\text{-}job + 2.10 * grade) \pm$$
$$1.96 * \sqrt{10.82}] = [(56.51 + 5.64 - 2.62 + 2.10 * 1.11) \pm 1.96 * \sqrt{10.82}] = [61.86 \pm 6.45] = [55.41\% ;$$
$$68.31\%]$$

We observe that a woman graduate in the area of Social Sciences with a high academic record will obtain a much lower rank of values of the OQI if, during her studies, she combines her degree studies with a work that is not related with her studies. However, she will obtain some much higher values if she combines her studies with a work that is related with her degree studies.

M4. Estimations according to added value

Arrived to this point, we want to know if women graduates who have brought an added value their degree manage to differentiate their occupational quality.

We remind you of the variables classified as explanatory variables of added value are the continuation of studies and job mobility.

We repeat the procedure of estimation. Table 5.6 collects the results obtained from the estimation of the model.

Table 5.6 | Model with added value variables

Occupational quality index	Parameter	Standard error	t / Wald statistic	p-value
Fix effects				
Constant	55.09	1.93	28.46	0.000
Technical area	12.15	2.50	4.85	0.000
Health Sciences	9.46	2.67	3.54	0.003
Experimental Sciences	5.80	2.87	2.01	0.062
Social Sciences	6.56	2.41	2.71	0.016
Humanities	-	-	-	-
Continuation of studies	1.35	0.46	2.88	0.004
Job mobility	1.54	0.69	2.21	0.027
Random effects				
Residual (σ_e^2)	221.20	4.22	52.39	0.000
Subarea ($\sigma_{\mu_0}^2$)	12.26	5.09	2.40	0.016

The results of the fixed effects, regarding the knowledge area factor, do not vary with respect to the results of the previous models. Regarding the new introduced variables, continuation of studies and job mobility, we observe that the obtained coefficient is positive and statistically different to zero. Therefore, there is a positive relationship between the continuation of studies or to have job mobility in the occupational quality; that is, the continuation of studies and job mobility improve the OQI in 1.35 and 1.54 percentage points, respectively.

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Regarding the results in the estimation of the random effects,[64] we observe that the residual variability, that is, the one that corresponds to the person, has not been practically reduced, but the variability between the subareas has been reduced. Thus, in controlling the effect of the area, of the continuation of studies and job mobility during the studies, we manage to explain 54.81% of the total variability among the subareas of studies. Only 5.2% of the total variability still corresponds to the differences between the subareas of studies.

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[64] As well as in the former models, the coefficients of random effects are also estimated for these two variables. These coefficients are not statistically significant and, therefore, we will only take into account the variability between the averages of the subareas and the variability of each student based on the average of the subarea to which he/she belong.

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M5. Estimation of a global model

Once we know the effect of the explanatory variables on the OQI in each of its "stages" of the university system, we will estimate the global model considering the effect of all variables at the same time. Following the same procedure used until now, table 5.7 collects the estimation of the improved model that we have achieved.[65]

Table 5.7 | Global model

Occupational quality index	Parameter	Standard error	t / Wald statistic	p-value
Fix effects				
Constant	51.91	2.17	23.84	0.000
Technical area	11.22	2.64	4.24	0.001
Health Sciences	9.87	2.79	3.53	0.003
Experimental Sciences	5.64	3.00	1.87	0.079
Social Sciences	6.31	2.53	2.49	0.025
Humanities	-	-	-	-
Access grade	0.90	0.25	3.55	0.000
A-level itinerary	3.18	0.78	4.07	0.000
Degree-related-job	1.85	0.51	3.61	0.000
Non-degree-related-job	-2.75	0.59	-4.65	0.000
Full-time student	-	-	-	-
Continuation of studies	1.12	0.51	2.20	0.028
Random effects				
Residual (σ_e^2)	206.90	4.45	46.45	0.000
Subareas ($\sigma_{\mu_0}^2$)	13.31	5.49	2.42	0.015

When all the explanatory variables are introduced —parent's educational level, academic record grade and job mobility— some stop from being statistically significant to explain the OQI. For the rest of coefficients, we obtain the next interpretation.

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[65] The explanatory variables with the fixed effects coefficients that were non significant have been eliminated from the model.

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Regarding the area factor of study, we obtain the same result seen until now: the OQI increases in 5.64 points, if the woman graduate belongs to an Experimental Sciences degree, and up to 11.22 if she is from the Technical area, compared with the Humanities woman graduates.

For the rest of predictive variables, we obtain a positive relationship with respect to the OQI, with the exception of the non-degree-related-job factor. That is, an increase of 1 point in the access grade, come from an A-level, to combine the studies with a degree-related job, the grades and to continue the studies after obtaining a degree make increase in a total of 7 percentage points the occupational quality. However, to combine studies and work, but with a non-degree-related-job, the OQI is reduces in 2.75 points.

The estimation of the residual variability (206.90) as well as the variability among subareas (13.31) has been seen reduced by the presence of explanatory variables. With the global model we manage to explain 50.9% of the observed differences between subareas.

Arrived to this point, and from the obtained results, are we facing a question or a challenge to go beyond?

The occupational quality not only depends on the university environment. Could there be some type of influence by the characteristics that describe a job? Could it be related with the character of the training acquired, like the competences and their usefulness in the job world? And, finally, would the different personal situations that have to do with the form of facing a professional career explain the existing differences of individual character between the women's collective that receive the same university training?

Our system of indicators and differential variables collected in the survey does not give answer to this last question, but we could check out if the information related with the description of the job and the acquired competences are directly related with the OQI.

M6. Estimation of a model according to the job placement characteristics

As we can see on tables X and XI of annex VIII, if we introduce variables that describe the job placement, like job area (public vs. private), the number of people working for the company or institution, if they have management functions or not, the appraisal of learning in decision making and leadership with regarding their job, etc, do we manage to significantly reduce the residual variability (from 221.61 to 206.75) as well as the variability between subareas of studies. Precisely, we manage to explain 59.74% of the differences between the subareas of studies.

Moreover, if we used this information together with the progress variables (those set of variables that have a higher percentage of variability of OQI), we would still improve the adjustment of the OQI: we would manage to explain 63.7% of the differences of the OQI between subareas.

5.2 Results discussion

In this section we have used socio-educational variables and variables that collect information of aspects that are given before reaching the current job (in the moment of the survey), and we have analyzed the influence on the quality of the insertion in the labour market (measured from the OQI) after three years of finishing their career.

Table 5.8 collects the variability of the OQI divided between variability in the subareas (residual) and variability among the subareas, that is, variability between the degree's typology. As we can observe, the major part of the variability is among people in a same subarea.

Table 5.8 | Variability explained at a micro level (individuals) and macro level (subareas)

	Null model		Model 1		Model 2		Model 3		Model 4		Model 5	
	Var.	%	Var.	%	Var.	%	Var.	%	Var.	%	Var.	%
Residual	221.62	89.09%	221.66	94.86%	209.19	93.54%	217.51	95.26%	221.2	94.75%	206.9	93.96%
Subareas	27.13	10.91%	12.02	5.14%	14.44	6.46%	10.82	4.74%	12.26	5.25%	13.31	6.04%
Total	248.75	100%	233.68	100%	223.63	100%	228.33	100%	233.46	100%	220.21	100%

This should not surprise us. Figure 5.2 collects the plot box that has been analyzed at the beginning of this chapter. Now it is used to illustrate the great importance of the individual variability.

Figure 5.2 | Variability explained at a micro level (individuals) and macro level (subareas): the upper quartile of Geography and History vs. the lower quartile of Civil Engineer and Advanced Production Technologies
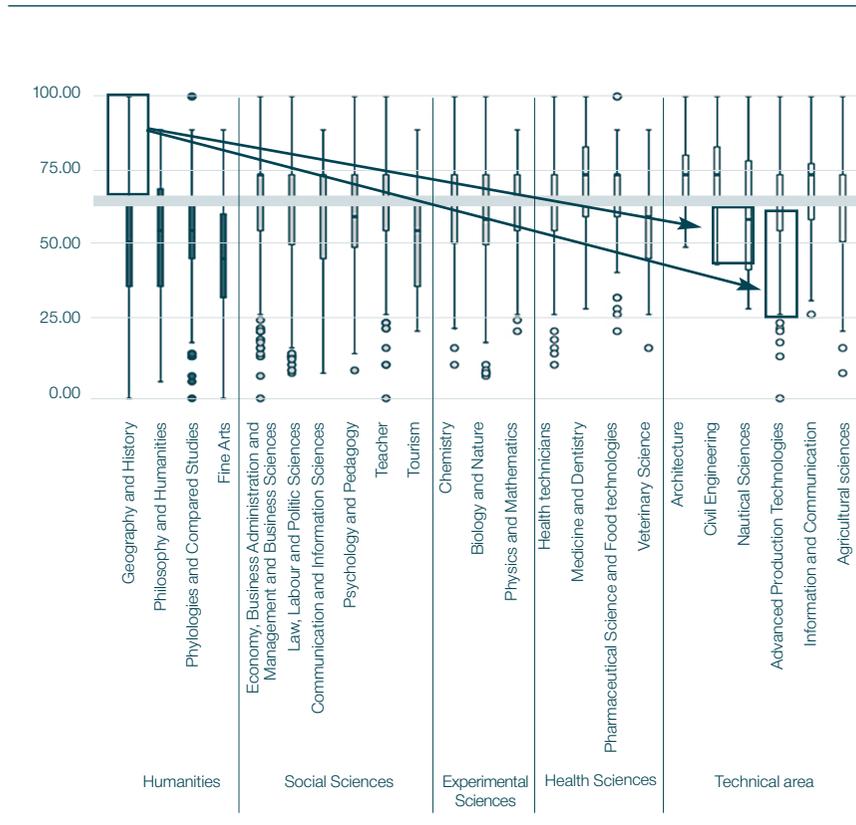
The graph remarks Geography and History —that is one of the subareas that shows a more negative behaviour (in accordance with the summary of quality indicators of the insertion of pages 92-93)— and Civil Engineer and Advanced Production Technologies —two of the subareas with a higher positive behavior.

In the graph we observe that the upper quartile of Geography and History has a higher OQI that the lower quartile of Advanced Civil Engineer or Advanced Production Technologies. Said in a different way, 25% of women of Geography and History ($n = 63$) has a higher average of OQI than the 25% of women in Civil engineer ($n = 13$) or to the 25% of women in Advanced Production Technologies ($n = 49$). In short, to course Humanities degrees or to course studies of the Technical area does not determine the quality of the insertion in the labour market, but it increases the probabilities of a more or less favourable insertion, although under no circumstances there is a direct or "fatalistic" relation.

Table 5.9 calculates, from the data on table 5.8, taking the null model as a referent, the variance percentage which manages to be explained with each of the models.

Table 5.9 | Reduction in variability related to the null model

	Model 1	Model 2	Model 3	Model 4	Model 5
Residual	-0.02%	5.61%	1.85%	0.19%	6.64%
Subareas	55.69%	46.77%	60.12%	54.81%	50.94%
Total	6.06%	10.10%	8.21%	6.15%	11.47%

Of the analyzed models, the one which explains more variability of the OQI is the global model (M5), that reduces the variability of the OQI in 11.5% (see the comparative table of models). As we can see, the models are little powerful regarding the explanation of the global variability of the OQI. This is coherent with what has been previously commented of the great variability of people in a same subarea of studies, although, as we have seen in model 6, the explanatory capacity of the variance is increased if the variables that describe the current job are introduced. However, as these variables cannot help future higher education students when managing their exploratory behavior in the job world, we have no gone in depth into this issue.

Once we have stated this accuracy, it is unquestionable that the variability in the quality of the insertion in the labour market is not profoundly explained. That is,

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[66] The research team has applied these models to the global data base (that includes men and women) and has ascertained that gender -included as an entry variable - does not have a significant effect in the quality of the labour market insertion, because its effect is diluted in the knowledge areas (we remind you that the sub-areas composition is disproportionate by gender).

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neither the access variables[66] nor those of progress or of added value explain all together more than11% of the variance (M5). This leads us to affirm that the data collected with our instrument of analysis, although they offer us quite accurate information of the quality of the insertion in the labour market of the university graduates population, they are not sufficient to explain it.

The typology of data included in the survey on insertion in the labour market collects information of the educational credentials and of the social determiners, but collects little information of the personal determiners (specific competences, transversal competences, degree management skills of, attitude facing a job), that is, of the set of factors which the **employability theories** point out are influential in the access and the maintenance of a job. Our instrument does not collect information either about the selection processes or the variables related to the selectors and the companies, which also end up having influence on the occupational quality. In short, and in accordance with the model of professional insertion portrayed in chapter 2, we lack of information about the **micro context of the insertion**, that is, about the interaction between people who look for a job and the employment (ways of recruitment, factors of selection, and profile of the person that interviews).

The models, however, are powerful to reduce or to explain the variability between the subareas. Like these:

■ The **knowledge area** (model 1) collects 55.6% of the differences between the subareas of studies with respect to the OQI. That is, more of 50% of the differences of the OQI between the subareas of studies are given by their classification areas of Humanities, Social Sciences, Experimental Sciences, Health Sciences and Technical area. Therefore, the degrees of each of these areas have a similar behavior between them (the degrees of Humanities or of Health Sciences between them) than between different subareas (for example, Social Sciences vs. Technical area).

■ With the **access to university variables** (model 2) we manage to explain 46.77% of the variability of the OQI. Part of the differences of the occupational quality between subareas are also given by the access grade to university, the parent's educational level and the access itinerary to university.

■ The **progress variables** (model 3) help to explain 60.11% of the differences in the OQI between the subareas. Thus, the job record that they have had during the degree and the grade of the academic record are variables that will help to differentiate the occupational quality. However, the mobility during the studies does not bring differential value to the OQI.

■ The **added value variables** (model 4), like the continuation of studies and job mobility, explain 54.81% of the differences in the occupational quality between subareas.

- And, finally, the model with all the information referring to the access and the progress at university and the added value to the degrees (model 5) brings 50.9% of the differences between subareas.

From these results, we reach the conclusion that the explanatory variables that collect better the differences between the OQI of the different subareas of studies correspond to the variables related with the progress at university, especially regarding combining studies with work, as has been seen in the analysis of model 3.[67]

In short, our study demonstrates that:

- Although the data of the survey is useful to characterize the insertion in the labour market of the university graduate population, claim its utility or social value and orientate future students about the quality of the insertion in the labour market, its utility is limited regarding the explanation of the attained final quality.

- Neither the suppositions of the **theories on human capital** nor those **theories of social reproduction** are sufficient to explain the observed variability. We believe that the **employability theories** are more powerful in order to explain the quality of the insertion, because they make reference to the micro context of the insertion in the labour market. Qualitative studies on the trajectories of insertion in the labour market would allow exploring which variables would have to collect future instruments with extensive methodologies, such as the case of this research.

- The most influential element when predicting the OQI is, from the collected data, the chosen degree and the area to which it belongs (Humanities, Social Sciences, Experimental Sciences, Health Sciences and Technical area). In this sense, it is important that future students can make an informed choice, because, although the studies do not determine the occupational quality, they do exert a remarkable influence.

  What happens before achieving a job (access grade, parent's educational level, etc) and very especially the behavior of women during their studies regarding the

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[67] We want to make be evident that, in spite of the numerous bibliography consulted of the multilevel models (GAVIRIA, CASTRO, 2005; RUBMERGER, PALARDY, 2005; PARDO et al., 2007; MURILLO, 2008; SANDOVAL, 2007; GERTEL et al., 2006), the participation of a graduate in statistics and the advice of two experts in hierarchical models, we still have doubts and questions to solve on the interpretation of the results or the functioning of the software (because of problems of convergence in the estimation it was not possible to introduce more than two explanatory variables as random effects). To our understanding, this brings to light the need that the bibliography is more transparent regarding *how* to use this methodology, *which* criteria are used in the estimation and *how* can the different obtained results be interpreted in a more suitable way, and also the technical problems that they have found. Finally, as the models are of difficult understanding for users who do not have a strong statistical basis, we believe that it would be advisable to have meeting spaces between experts of the technique and its users.

combination of studies and work, have a significant influence on the attained occupational quality. It would be good that the university orientation services were conscious of these factors, in order to establish coherent policies of information and of orientation with these results.

■ Finally, as a person seems to be the most determining element in the quality of the insertion in the labour market, it would be good that the higher education institutions, for all its degrees, carried out a diagnosis of employability of their students. That is, all the academic and orientation staff should be conscious of which is the potential of the degree in relation to the labour market (specific and transversal competences), in order to optimize the study plans, the practices, etc. and orientating students in a more suitable way. Moreover, the students should receive advice on its marketing and presentation skills and on management strategies of the professional career.

6

CONCLUSIONS

6. CONCLUSIONS

In order to conclude our study, we find it appropriate to present a summary of the arguments and the main conclusions we have reached, from the point of view of a theoretical consideration as well as from data treatment.

Beyond offering a simple description of the labour situation of the studied collective, our global purpose has also a practical sense, with the aim of offering orientation and specific policies for the improvement in the processes of transition to the labour market, and also of proposing new prospective that allow a deeper knowledge into the phenomenon as well as an opening to new fields for future research.

6.1 The processes of labour insertion and graduates

The active policies of access to the higher education that have been carried out in the compulsory stages of the educational system have moderated the impact that the structural sociological factors of the family have on the probability of access to the following educational level. The consolidation of a mass higher education has led to a significant increase of the participation of woman in the university system. Different research carried out in the Spanish context shed light on a significant increase in the demand of access to higher education studies by women, and that their probabilities of access exceed in 10% of those of men.

During the last decade we have had a remarkable **decline** in group evolution of the **university students collective**, mainly caused by a demographic factor. We see, for example, that in Spain a total decline of 9% among students enrolled between 1998-1999 and 2006. It is interesting to point out that in this context women have slightly increased their presence (from 53.2% to 54.25%) and that, globally, women's participation in the Spanish and Catalan university systems exceed in almost 10 points compared to men's participation (55% vs. 45%). Regarding the presence of women in the system, apart from the participation increase, we can also mention a (minimal) re-orientation in their studies choice. Thus, for example, there is a 1 point decline in their participation in Humanities degrees, while at the same time there is a 5 point increase in their participation in Experimental Sciences[68] degrees and a 1 point increase in Technical degrees.[69]

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[68] While the desclive in this branch is 34.8% for men, it is only of 19.2% for women.

[69] For this period, the is an enrollment increase the technical area of 5,851 students, that represents an increase of 6%.

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Enrolment decline is accompanied by **less supply of graduates** in the labour market. Thus, for example, in Spain a decline of 7.5% of graduates is produced during the period between 1998-1999 and 2006. In this sense the situation in Catalonia is much more worrisome whereby, for the period studied (from 1998-1999 to 2007-2008), the decline of population with a university degree is much more pronounced (21%). However, following the same direction that we previously exposed, the data shows that women's trend in Catalonia is less negative, since it only has a decline of 19% in contrast to 25% in men.

The data on Catalonia shows a discouraging panorama in comparison to the rest of the Spanish autonomous communities from the point of view of human resources with university studies, especially in the areas of science and technology. Catalonia's position is below average compared to the whole of the autonomous communities in regard to the percentage of population with higher education studies and PhDs. The outlook is not very attractive as a result of the negative tendency in the enrolment and the graduation in knowledge areas like science and technology.

In global terms, we can conclude that, at present, the university women's collective is sustaining the stock of human capital in higher education, firstly for their access and participation in the university system, and secondly for their choice of studies and, finally because of their performance. However, in the area of science and technology the reality is not so encouraging, since although one of the objectives of Lisbon 2000 was to achieve gender equality in this type of studies, this aim will be achieved neither in Catalonia nor in Spain.

In Spain, the data show a high rate of activity of the university graduates collective (9 out of 10 find work in the labour market). Even though certain differences are still observed between men and women (on the line of 12 points), Spain has a similar occupation rate for each gender to the one that other countries of our geographical environment and development level have (between 80 and 90%).

If, as the data of the research shows, the fact of having university studies is a factor that has a positive influence on the insertion in the labour market, it is necessary to raise voices that contribute to diminishing the negative tendency in the access to university studies, especially for the men's collective. At the same time it is necessary to promote the presence of both collectives in the areas of science and technology, since it inconceivable to approach the challenges of the communication and economy society based on the knowledge without a stock of human capital with training in these areas.

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6.2 Explanatory approach of the relationship between education and work

Both the theories on human capital as well as those on social reproduction are approaches based on socioeconomics which deal with the relationship between the higher educational system and a qualified labour market. They differ, however, in the value that they concede to the educational credentials: while for on one hand, they ensure the performance or the productivity of the labour force (such as more education, more resources), on the other hand education is an element of selection and socialization in rules and values (the dominant groups will continue excluding the others). The employability theories, through the introduction of the personal factors (personal characteristics, competences, attitudes, skills of career management) measure both the influence of the educational accreditation (human capital) as well as the sociodemographic factors (gender, social class, race) in the attainment of a work and the consolidation of a professional career.

The human capital approach is meritocratic and does not foresee any gender discrimination. Thus, the differences between men and women are due to differences in human capacity (education, work experience) and segregation can go through different preferences regarding work (for example, towards part-time employment). That is, placing the differences in the order of the individual preferences more than as a consequence of social dynamics (for example, to be able to combine work and family life). According to the theories of social reproduction, gender is more of an inequality factor (such as social class and race) subjected to the dynamics of direct and indirect discrimination. These theories contribute to numerous concepts that allow explaining the differences between men and women, such as the glass ceiling or the concrete ceiling. Finally, for the employability theories, gender is one more factor that characterizes the person and that will influence their employability (competences, presentation and marketing skills, etc). These elements are flexible, that is, they can be changed through orientation actions and training. The employability theories emphasize the capacity of the people to have an influence on their insertion, although it is necessary to be conscious that their capacity to influence is limited by the dynamics of the labour market, the value of the degrees in the labour market, the profile of the people who select, etc.

Regarding the explanatory capacity of these theoretical frameworks of the labour insertion results, the main contribution of the theories on the human capital is that they emphasize in the need to compare —rather than gender or social class— the human capital; that is, the comparisons have to be made on training equality, experience, hours of work dedication, etc. However, these theories fall into another simplistic approach by supposing that the labour market is "pure and perfect" and that the person selection is due to individual preferences and not constrained by social dynamics of direct or indirect inequality. The theories on social reproduction

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do make reference to these aspects and bring interesting elements to explain them (glass ceiling phenomenon, etc), but do not allow to explain why, in gender and social class equality, there are different results in relation to the quality of the labour insertion, which the previous approach does allow. The theories of the employability are the most powerful to explain the differences in the professional success in one same degree (in equality of human capital), once the gender and social class effect is controlled (in equality of gender and social origin).

6.3 Labour insertion of university women in Catalonia: myths and realities on female labour discrimination

In global terms and independent of the degree studied or gender, labour insertion of the graduate collective studied is very positive, in regard to the rate of insertion as well as to the quality of insertion. The data allow us to affirm, then, for women as well as for men, that the reality of having university studies is a factor that influences in a very positive way in the transition to the labour market.

Taking into account multiple factors that intervene in the transition process to the labour market and being aware that it is beyond our scope to offer an explanation for the whole set of factors that play an influence, our objective has been to establish what are the variables that promote quality insertion of the graduates which we have studied, on the basis of a specific range of indicators

After analyzing all of the indicators for men and women, we can globally affirm that **we have not found significant differences** regarding the quality of insertion in the studied collective. However, the great differences in the quality of insertion are given by the chosen degree, which is a key factor on quality in the transition to the labour market and has an influence on the evolution on the whole of the analyzed indicators.

In global terms, **the employment rate** of the polled women (93%) is similar to that of men (94%). Through an analysis by areas and subareas, we can affirm that the employment rates are similar for both genders and that the most significant differences in employment are due to the chosen degrees more than to gender. For example, we find the greatest difference in the women's collective (13 points) between the employment rate of Philosophy and Humanities (85.22%) and of Medicine and Dentistry (98.33%), while the greatest difference we find by gender in the same degree is in Civil Engineering, with 6.7 points.

The **unemployment rate**, for men as well as for women is 3%, and both collectives have the highest rates in Humanities. In general, the employment rate as well as the unemployment rate shows that there is no area where women present a transition to

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the labour market in worse conditions than their promotion colleagues. Again, the data vary more significantly by matters of degree rather than by gender.

A third indicator, not as andocentric, is **the rate of inactivity for family reasons**.[70] Out of the total population polled (12,258 graduates), only 48 people have manifested that they are unemployed and are not searching for a job due to family reasons: 1% of women (46 out of 7,501) and 0% of men (2 out of 4,757). The data that this indicator shows has little significance and can be due to the characteristics of the polled population: young graduate people three years after having finished their studies. In temporary terms, we could point out the fact that the labour insertion of this collective has not been influenced by the sexual division of work and/or the imposition of the bread-winner model.[71] It seems, however, that there are certain tendencies, which have to be analyzed with caution, and that concentrate a greater percentage in certain areas (Humanities, Health Sciences and Social Sciences) than in others (Experimental Sciences and Technical areas), which could be related to a differential socialization for men and women.

Along this line, it would be interesting to do a follow-up study of the same cohort of graduates some years later, to analyze the model of participation in the labour market of these men and women at an older age.[72]

Labour stability, understood as **enjoying a permanent labour contract**, is an indicator which is intimately associated with the quality of labour insertion. Again, labour stability is closely linked to the typology of degrees,[73] rather than gender. In the women's collective, the most significant differences are given depending on the degree studied (32% of permanent labour contract in Arts degrees versus 82% in Economics and Business Administration and Management) this does not happen in the case of men. Contrarily to the theses that defend that women have more unstable work situations, the data show that the gender differences not always

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[70] This indicator shows information on the number of graduates that in the moment of the survey are in a situation of unemployment and are not looking for a job due to family reasons or maternity/paternity.

[71] Sociological model based on the differentiated role assignment and that attributes men the role of heads of family and of main income suppliers, and to women the role of housewives and of secondary income suppliers or non-suppliers (*Recull de termes Dones i Treball*, Departament de Treball, Generalitat de Catalunya).

[72] There are theories that consider that the participation of the women in the labour market is in a U form, while mens is a model of continuous work trajectory.

[73] Although the analysis by areas in some cases seem to indicate that there are less permanent contracts for women, like for example in Social Sciences, the analysis by sub-areas or typology of degree demonstrates that, in some of these sub-areas, there is a higher stability for women (like in Economics, Business Administration and Management and Tourism).

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discriminate women; on the contrary, depending on the degrees, women enjoy more stability than their men colleagues of the same cohort. In this sense, the stronger differences are in the line of 20 points in favour of women in nautical degrees and in Food Science and Technology.

There are certain aspects that have to be taken into account so as not to skew the reading of the data. For example, in degrees like Architecture, where there is a high proportion of women, the permanent labour contract rate is low because freelancing in this profession is traditional. This fact, however, does not result in higher temporary contract rates.

Regarding **temporality**, this affects a third of women and a quarter of men from the sample. Although in some degrees, despite the fact that there is more temporality for women, there is also a higher percentage of permanent labour contracts. This apparent paradox is explained by other typologies of labour situations, such as receiving scholarships or becoming freelance, where there is more masculine representation.

Again, the temporality depends more on the degree than on gender. There are certain degrees, such as teaching or health professionals, where there is a high percentage of temporary contracts, even though the work situation is equal or more stable than that of other graduates who enjoy permanent labour contracts. It is noteworthy that these are degrees with a high female presence.

A further indicator which we worked with to analyze the quality of labour insertion is the **employment in managerial positions (development of executive functions)**. Although it is true that there are differences between men and women, the rates show similar tendencies (for men they fluctuate between 22.5% in health sciences and 47.8% in the technical areas and for women between 18.50% in health sciences and 40% in technical areas). Globally, in a same subarea there are slightly higher percentages for men than for women. The most significant differences are in the technical area, which could be related to the fact that it is traditionally a men's sector and women could find themselves more affected by the glass ceiling phenomenon.

The behavior of this indicator is specially influenced by the typology of degrees. There are degrees such as teaching or medicine in which the percentage of people who exercise managerial functions is very low, unlike others such as economics and business administration and management where there is a higher probability. Thus, differences found between men and women in social sciences (30% of women exercise managerial functions versus 41% of men). This can be explained by a greater presence of women in teaching and of men in economics and business administration and management.

Likewise, it is necessary to highlight that the probability of exercising managerial functions is also linked to the typology of contract, in favour of the people who enjoy a permanent labour contract.

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From all of the analyzed indicators, **work satisfaction** is the only one with a subjective character.[74] In global terms, the polled graduates are satisfied with their jobs in the moment of the interview. Even though there is a tendency for women to appraise their situation in a more satisfactory way than men, the differences by gender are small. The differences do not differ either significantly by subareas; thus, we find that the average of satisfaction of women in geography and history degrees is the same as women in biology and nature or in advance production technologies, even though they enjoy different work conditions related to temporality rates, development of managerial functions or adequacy of their studies to their job.[75]

Income level[76] is a widely used indicator in social research in general and in particular of gender. Generally, research has shown that university women have lower salaries than men. Our data proves the existence of this salary gap[77] in favour of men, even though the differences in the same gender in different areas of knowledge are more significant than the one between genders in the same area of knowledge. However, the fact that salary differences have been found in the public area in the teachers' collective with the same contract typology, makes us question the reliability of this data for the intragender comparison.

Another indicator that we have considered is **the suitability rate to university-level functions**, which shows the number of graduates that have university-level job functions. Like the satisfaction indicator, but in less measure, this indicator has a subjective component. Even so, it is evident that the degrees that are inserted in closed markets, like those from the health sciences area, have a greater probability of exercising university functions.

In global terms, the data show more negative rates for men in the different subareas, except in health professionals, veterinary science, navigation and advanced production technologies.

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[74] The goal of its use has been to measure a dimension of the labour market insertion quality that the rest of objective indicators do not show, even though some authors recommend not to use it because of its low correlation with these indicators.

[75] These homogeneous results by gender and typology of degrees have questioned the utility of the indicator for the analysis of the quality of labour insertion.

[76] We must say that the remuneration is an indicator with low reliability, since there is a certain resistance to offer this data and a certain difficulty on how collect the results. The data have shown that, in the same degree, type of contract and functions, for example in the collective of teachers, there are differences in the answers of the population polled and in favor of men. Can be deduce, therefore, that the differences can be due to a different perception of profits? A in depth research should be carried out to reply this question.

[77] Salary breach: difference between the medium wages of men and of women (*Recull de termes Dones i Treball*, from the Labour Department, Generalitat de Catalunya).

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Regarding the **part-time work rate**, this indicator is very influenced when determining the quality of insertion, due to the fact that whether it is a matter of individual choice or of an imposition of the market.[78] For women as well as for men, the rate is seen measured by the area, with the highest values in humanities (26% for women and 20% for men) and the lowest in the technical area (7% for women and 4% for men). Even though the percentages seem to indicate that the work presence in part-time jobs is higher for women than for men, the data also shows that sometimes, by subareas, the differences are minimal or are positive for women.

An interesting aspect is that part-time jobs are more common in the public area than in the private one for women as well as for men, and the most significant differences in both genders are in the private area. It is interesting to observe the fact that the percentage of men who work part-time in the public area duplicates those that work in the private one. This evidence can make us think that probably there is starting to be a certain re-orientation in the outlines of the bread-winner model and, when the context facilitates it, men can start to take an inverse role in the Men and family area.

Finally, and as a summary indicator, we have carried out an analysis of the **OQI**[79] (Occupational Quality Index), since it integrates four key variables to measure the quality of insertion. Globally, and along the analysis of the exposed indicators, it has been proven that the quality of insertion, for men as well as for women, is high. The results of the OQI show the same data and they are quite homogeneous. As with almost all the analyzed indicators, we find more differences comparing subareas than between men and women in a same area.

6.4 Explanation of the occupational quality

In this study, only focusing on the university women graduates collective, we have analyzed the model of women insertion attempting to determine the influence of the variables related with the university system on their quality insertion. From the results analyzed in chapter 5, we can state the following conclusions:

■ Firstly, the quality of the labour insertion is scarcely explained. The variables of entry (socioeconomic status, access grade itinerary, etc), the variables of

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[78] Our survey, because of its characteristics, does not allow us to know if the graduates have part-time jobs by choice or by necessity.

[79] The Occupational Quality Index was developed by a research group led by Dr. E. Corominas (2007). It incorporates four of the most important aspects for defining the quality of employment: the type of contract, salary, job suitability with the degree qualification and job satisfaction.

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progress (combination of studies and work, academic student record, etc) and those of added value (continuation of studies, mobility) together explain slightly over 11% of the variance. In this sense, neither the suppositions of the theories of the human capital (value of the educational accreditations) nor those of the theories of social reproduction (gender or social class influence) are sufficient to explain the observed variability. We believe that the employability theories are more powerful to explain this because they refer to the micro context of labour insertion (personal decisive competences like career management, etc), although it would be necessary to also consider other elements of the micro context: the employment (selection processes and recruitment, profile of the people who select, etc).

■ Secondly, the chosen degree and the area to which it belongs (humanities, social sciences, experimental sciences, health sciences and technical areas) are, out of the analyzed data, the most influential element when predicting the OQI. In this sense, it is important to insure that, at least, the choice of the future and the potential students is an informed one, although the studies do not determine occupational quality, but they do exert a significant influence.

■ Finally, it is necessary to be conscious of what happens before getting a job (access grade, parent's level of studies, etc) and very especially, the behaviour of women during their studies regarding the combination of studies and work (to work during the studies in related jobs), have a significant influence on the attained occupational quality. It would be good, therefore, that the university orientation services were conscious of these factors, in order to establish coherent policies of information and orientation with these results.

6.5 Work methodology of the studies on labour insertion in higher education

Research on labour insertion has been carried out in our country for more than twenty years. It is of a quantitative nature and uses descriptive techniques, because its main objective has been to know —describe— what the labour situation is among university graduates.

There is research, however, that has used data coming from these surveys, or of more extensive data bases (such as the surveys on active population), to carry out comparative research based on the educational level or on gender, in which an explanatory quantitative methodology has been used. In explanatory models, we find the family of the linear generalized models (logit, probit, etc), the traditional regressional models and the multilevel models with longitudinal data.

The **unit of analysis** (whole of the active population, whole of university population, people graduated in a determinate area or people graduated in a typology of degrees) is one of the main problems that we find in research, especially when they intend to describe the differences between men and women regarding the work conditions. In this sense, we coincide with the human capital theories in the fact that it is a severe methodological error to compare men and women without taking, at least, their educational level into account. Even more when considering the different distribution of men and women into the diferent typology of degrees (subareas), and the fact that the labour market is segmented according to the typology of degrees (more or less open markets, of legal regulated access or not, etc), it is not appropriate to make global or at a scale of disciplinary area gender comparisons. Thus, along this research we have ascertained repeatedly that situations that seemed discriminatory, when for example women and men of social sciences were compared, disappeared when the analysis was made by subareas (for example, men and woman teachers).

In this research we have used a descriptive methodology to explain the quality of the labour insertion, and the multilevel model (hierarchical analysis of the variance) has been used to elaborate an explanatory model of the quality of the labour insertion. From the results, we can conclude that:

■ The tool used —the survey on labour insertion of the Catalan public universities— is very powerful for the description of the occupational quality, and allows to make a follow-up of possible discriminatory situations by gender or social class.

■ The tool, however, has little explanatory power on why some people have a successful work situation while others are found little suitable and/or in precarious labour conditions. We believe that this is due to the fact that it does not incorporate enough information of the subjective personal determiners (competences of professional career management, attitude or availability for the employment, etc).

In this sense, we believe that in future research it would be good to complement the quantitative information collected in this typology of studies with qualitative information on the itineraries of transition for students (collected through time charts, interviews in depth, etc). To move forward in understanding the quality of insertion, therefore, we believe that more research with qualitative methodology is necessary to explore the different typology of labour transitions.

Finally, in relation to the methodology of hierarchical models, we think that the itinerary still remains to be appealed regarding its application. In this sense, it would be good to have more transparency in the publications about the process and the criteria of estimation, and also to inform of the percentage of global variance.

6.6 New proposals for the approach of the labour insertion among university woman phenomenon: studies prospectives

We do not want to finish our study without opening new research prospects as a result of the reflections that have kept on appearing for us and that can have a special interest in advancing in the research in depth of this phenomenon.

In first place, it is necessary to highlight that, throughout the research, it seems like the analysis of the data has kept on "breaking" some myths related with the relationship between woman and insertion in the labour market, especially the ones related with the discrimination by gender at the workplace. We consider that a big part of the conclusions which we have reached have to be set in a context taking into account the characteristics of the sample population: young university graduates only three years after graduating. It is, therefore, very probable that realities such as the glass ceiling, the concrete ceiling, the salary discrimination, the employment vertical segregation or the double presence, among others have not had time to influence on the transition to the labour market in the women collective. In this line, it would be very interesting to carry out a follow-up of the same sample in some years, in such a way that we could analyze how women's labour trajectories are influenced by aspects related with the discrimination at the workplace or if equity of gender still remains.

In second place, and since the sociostructural variables used, such as status, gender and degrees, tend to contribute with a small explanatory part, empirically speaking, of the insertion quality, other more qualitative approaches would be necessary with the objective, on the one hand, of deepening on how women take a stand and/or face their itineraries of labour insertion (attributes, personal potentiality and acquired competences) and, on the other hand, analyzing the weight of the different external factors (structure, conditions and characteristics of the labour market).

Other proposals with a more concrete character are **the improvement of the treatment and the reliability of some indicators worked in the research**. One of these indicators, which we previously commented, is the salary profits. We require research that allows increasing the reliability of the information collection, since incongruence that always went in the same direction has been detected: systematically, the men manifest to charge more that the women, even in areas where the remunerations cannot cause salary discriminations, like in teachers.

Another proposal has its aim on the modification of the employability's quality indicator, since the final data has led us to considering that it is an indicator that

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tends to skew the results. Our proposal is in the line of taking out the variable of general satisfaction with the workplace,[80] because the fact that the variable probably has a such important weight (multiplier effect) it tends to homogenize the results.

6.7 Orientation and action proposals

To conclude this research, in this section we want to offer some hints and orientations as possible performance proposals to improve the quality of the transition to the labour market of our graduates.

Firstly, and given the significance of the typology of degrees in the quality of insertion, it is necessary to remember that an **co-educational** effort has to be made, especially within the framework of the primary and secondary school education, focused to break the gender stereotypes and the models of masculinity and feminity that still today strongly determine the selection of the educational itineraries, and later occupational, of men and women. In this sense, we consider that this type of action will benefit both collectives, to be able to live the differences between men and women in equality of conditions.

In second place, it is necessary to promote **transforming policies** that allow to keep on breaking the stereotypes that in a historical way have configured the division of the productive and reproductive work, and the influence of this division on the vital itineraries of men and women. For example, the data we have worked on gives us information to be able to affirm that, in a certain measure, the men are initiating the inverse itinerary towards the co-responsibility into the domestic house area when the environment allows an advance of the equality of right to the real equality. This is the case, for example, of the part-time job rates of the men in the public area of the labour market (which double the ones in the private area).

Finally, our proposals are aimed at **the orientations, the employment and the policies that can be carried out from the university system**. On the one hand, it is necessary that the academic community is conscious of the employability of the same studies, that is, of the typology of labour market that they prepare their students for (open vs. closed, and degree in which it competes with other degrees). This reflection should go accompanied of an analysis of the typology of specific and transversal competences which the training profile allows to develop in its students.

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[80] In this line, some authors like Muñoz de Bustillo i Fernández (Corominas, 2007) recommend not using the satisfaction variable to measure the occupational quality, because of its low correlation with other objective quality indicators (salary, stability and working day). In addition, there is a low variability of the indicator's scores.

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This would allow that the future graduates were more conscious of their own weaknesses and strengths in their process of work transition.

This reflection on the relation of the studies with the labour market would be necessary to be reflected on the definition of the study plans (profile of competences) as well as in the practical dimension of the curriculum (subjects practices, but also external practices). The degrees where the labour market is more nebulous (for example, in the Humanities area) would probably be the ones that would benefit from a greater interaction between the studies and the labour market. Finally, and considering the huge weight of the personal determiners in the labour insertion, it is necessary not to forget the role of the academic and work orientation services, and also of the tutorship plans, since the main tools that the university has to help to work the employability competences of its future graduated (specific and transversal competences, degree management competences, attitude towards the work, etc).

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ANNEXES

ANNEX 1. 2004 GRADUATE QUESTIONNAIRE

DEGREE

....

1. Do you work at present?

    (1) Yes
    (2) Not at present → State your last employment. Do not reply to SATISFACTION section
    (3) Never → Go to qu. 64

2. In what sort of work are you/have you been employed?..................................

ONLY FOR fine art, journalism, audiovisual communication, psychology, nursing, pharmacy, medicine, veterinary and architecture, there are pre-set categories. Please classify your work in one of the following fields.

If you are a **medical graduate**, have you completed or are you in the process of completing the MIR (internal resident doctor training programme)?

    (1) Yes, I did it
    (2) I'm doing it
    (3) No

In the event of (1) or (2), in which medical specialism?

3. Did you work during the last two years of your degree?

    (1) No, I was a **full-time** student or with intermittent work
    (2) Yes, I studied and worked **part-time** in a job related to my studies
    (3) Yes, I studied and worked **part-time** in a job not related to my studies
    (4) Yes, I studied and worked **full-time** in a job related to my studies
    (5) Yes, I studied and worked **full-time** in a job not related to my studies

4. Is your current job your first?   (1) Yes   (2) No

5. How long did it take you to find your first job?

    (1) It was the job I did before completing my degree
    (2) Less than 1 month
    (3) Between 1 and 3 months

(4) Between 4 and 6 months
(5) Between 7 months and 1 year
(6) More than one year

6.   How did you find your first job?

(1)   Contacts (personal, family...)
(2)   Newspaper advertisement
(3)   Public competition
(4)   Servei Català de Col·locació (Catalan employment agency) / INEM
(Spanish employment institute)
(5)   Self-employment
(6)   Internship
(7)   University services (employment bureau, observatory...
(8)   Temping agency
(9)   Recruitment agency
(10) Internet
(11) Other

In relation to you **CURRENT JOB** (the main one) or your **LAST JOB**:

7.   When did you start work there? .... (*two digits*)

8.   What was required for this job?

(1) Your specific degree   → Go to qu. 9.1
(2) Any degree   → Go to qu. 9.2
(3) No university degree was required   → Go to qu. 9.2

9.1. Is the job you do/did characteristic of your training? (1) Yes   (2) No

9.2. For the job that you do/did, do you think a university degree is necessary?
(1) Yes   (2) No

10. To which branch of economic activity does the company where you
work/worked belong? ....

11. What duties does/did the job involve?

(1) Direction/Management   (2) Commercial or logistical
(3) Teacher   (4) R&D
(5) Medical and social assistance (6) Art and design
(7) Technical duties   (8) Other skilled duties (administrative...)
(9) Non-skilled duties (auxiliary...)

12. What sort of contract do/did you have?

(1) Long-term
(2) Self-employed → 12.1. Those answering "Self-employed", do/did you work:

        (1) For oneself → Do not reply to: FACTORS INFLUINCING
                   CONTRACTING (24-31)

        (2) For a third party
(3) Temporary

(4) Internship   Those answering "Internship", do not reply to the sections:
           SATISFACTION WITH CURRENT WORK (19-22), FACTORS
           INFLUENCING CONTRACTING (24-31) or NUMBER OF WORKERS IN
           THE COMPANY (17)

(5) Without contract For those who answer "without contract" do not reply to FACTORS
           INFLUENCING CONTRACTING (24-31)

13. Do you work full-time? (Except (4) those answering "Internship" in qu. 12)

(1) Yes (2) No (part-time…)

14. How long was the contract for? (Only those answering (3) "Temporary" in qu. 12)

(1) Less than 6 months (2) Between 6 months and one year
(3) More than one year

15. From which sector is the company: (1) Public (2) Private

16. How much do you/did you earn a year (gross)?

(1) Less than 9,000 EUR   (2) Between 9,000 and 12,000 EUR
(3) Between 12,000 and 15,000 EUR (4) Between 15,000 and 18,000 EUR
(5) Between 18,000 and 24,000 EUR (6) Between 24,000 and 30,000 EUR
(7) Between 30,000 and 40,000 EUR (8) More than 40,000 EUR

17. How many people does the company employ? (Except: (4) those answering "Internship"
                         in qu. 12)

(1) Less than 10   (2) Between 10 and 50
(3) Between 51 and 100 (4) Between 101 and 250
(5) Between 251 and 500 (6) More than 500

18. Where did you/do you work (province or country)?

    (1) Barcelona   (2)Tarragona
    (3) Girona   (4) Lleida
    (5) Other autonomous communities   (6) Europe
    (7) Other

EVALUATION OF SATISFACTION IN RELATION TO CURRENT JOB

Rate your satisfaction from 1 to 7 (where 1 is **not at all** satisfied and 7 is **very satisfied)** (Except internships and those who are not at present employed i.e. those answering "Not at present" in qu. 1, "Internships" and "Without contract" in qu. 12)

19. With the content of the work ....

20. With the promotion and personal development prospects? ....

21. With the salary? ....

22. With the usefulness of the knowledge gained through university training for the

job? ....

23. With the job in general? (Those answering "Internship" in qu. 12 please reply to qu. 23)

        ....

EVALUATION OF FACTORS INFLUENCING CONTRACTING

Rate the reasons which influenced your contracting from 1 to 7 (where 1 is of little importance or not at all influential and 7 is very important or very influential): (Except those answering internships, without contract and self-employed and working for oneself: "Internship" and "Without contract" in qu. 12 and "Self employed working for oneself" in qu. 12.1)

24. Theoretical knowledge ....

25. Practical knowledge ....

26. Language training / Having knowledge of languages ....

27. Training in the use of information technology and new technologies / Command of information technology and new technologies ....

28. Character: personality, social skills, communication ....

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29. The management and planning skills ....

30. Teamwork skills ....

31. In short, what role has your university training as a whole had on your contracting? ....

EVALUATION OF TRAINING RECEIVED AND ITS SUITABILITY TO THE WORKPLACE

What is your opinion of the training you received at university? Rate the level of training you received at university and its suitability to the workplace from 1 to 7 (where 1 is very poor and 7 is very good).

32./33. Theoretical training ..../...... 34./35. Practical training ..../......
36./37. Oral expression ..../...... 38./39. Written communication ....../......
40./41. Teamwork ..../...... 42./43. Leadership ..../......
44./45. Management ..../...... 46./47. Problem solving ..../....
48./49. Decision making ..../...... 50./51. Creativity ..../......
52./53. Critical thinking ..../...... 54./55. Operational skills:
information technology
......./......

56./57. Operational skills: 58./59. Operational skills:
languages ..../...... documentation ..../......

60. If you had to start again, would you choose the same degree course?
(1) Yes   (2) No

61. If you had to start again, would you choose the same university?
(1) Yes   (2) No

CONTINUED TRAINING

62. Since completing your studies, have you continued or are you continuing to study?

(1) No → Go to qu. 64   (2) Yes, specialised courses
(3) Yes, a degree course   (4) Yes, a postgraduate or master's
(5) Yes, a doctorate   (6) Other

63. Are you studying the course at the same university?   (1) Yes   (2) No

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MOBILITY

64. Have you had any experience with mobility?

(1) No   (2) Yes, academic mobility
(3) Yes, occupational mobility   (4) Yes, academic and occupational

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ACADEMIC PERFORMANCE AND SOCIOECONOMIC STATUS:

65. What grade did you achieve in your degree course?

(1) Pass (third class honours)   (2) Good (Lower-second class
                                              honours)

(3) Excellent (uppersecond   (4) Distinction (first-class honours)
    class honours)

66. What is the highest level of education achieved by your parents?

(1) Neither have completed any formal education
(2) One has gained secondary education qualifications
(3) Both have gained secondary education qualifications
(4) One has achieved higher education qualifications
(5) Both have achieved higher education qualifications

67. What is your father's current or past occupation?

Does/did he work:

(1) For himself → 68.1. Is it a job that requires university education?
                         (1) Yes   (2) No

(2) For third party   → 68.2. At what level?

                                (1) Direction/Management
                                (2) Senior technician
                                (3) Qualified
                                (4) Non-qualified

69. What is your mother's current or past occupation?

Does/did she work:

(1) For herself → 70.1. Is it a job that requires university education?
                         (1) Yes   (2) No

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(2) For a third party → 70.2. At what level?

        (1) Direction/Management
        (2) Senior technician
        (3) Qualified
        (4) Non-qualified

IN THE CASE OF UNEMPLOYMENT (Those answering: (2) Not at present and (3) Never in qu. 1)

71. Are you currently looking for work?

    (1) Yes → Go to qu. 74
    (2) No

72. If your answer was NO, what are your reasons?

    (1) To continue studying/public competitions
    (2) Maternity/family → 73.1. If your answer was Maternity/family, do you
                         hope to look for work in the future?

                    (1) Yes → End of questionnaire
                    (2) No → End of questionnaire
    (3) Other

From qu. 74 to qu. 85 (Those answering: (1) "Yes" in qu. 71)

74. How long have you been looking for work?

    (1) Less than 6 months   (2) Between 6 months and 1 year
    (3) Between 1 and 2 years   (4) More than 2 years

75. What means do you use to look for work? (You can select more than one option)

    (1) Personal contacts or family   (7) University services
                                 (employment bureau...)
    (2) Personal initiative (sending   (8) Education cooperation
        curriculum, requesting interviews...)   agreements
    (3) Newspaper advertisements   (9) Colleges or professional
                                 associations
    (4) Public competitions   (10) Internet
    (5) Servei Català de Col·locació   (11) Other
        (Catalan employment agency)
    (6) Creation of own company or office (12) I am not looking for work

Rate from 1 to 7 the importance of each of these elements as regards the problems you have had finding work (where 1 is not very important and 7 is very important):

76. Deficits in the university training you received ....

77. Personal activities that stop you working (studies, family, other...)
....

78. Lack of professional experience ....

79. I want a job I enjoy ....

80. Lack of labour market knowledge ....

81. I want a job with a satisfactory remuneration ....

82. Lack of foreign language knowledge ....

83. Lack of computer skills ....

84. Lack of complementary skills or knowledge ....

85. Since graduating, how many jobs have you turned down for being unsuitable?
....

(Skip to questions 65 to 70.2 and complete the survey)

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ANNEX II. DATABASE VARIABLES

Table I | Database variables

Variable name	Description	Codification
nume	Code assigned by AQU Catalunya	
NomTit	Name of degree	
SEXE	Gender	1. Women 2. Men
Sitact	Current job situation	1. I work 2. I do not work, but I have worked after my studies 3. I have never worked
MIR	Have you got a MIR? (only for Medicine)	-2. Non applicable 1. Yes 2. Yes, I'm currently studying for it 3. No
ESPE	Specialty (only for Medicine)	-2. Non applicable from 1 to 50. (*See Table 3*) 99. Others (Specify)
EspeAltres	Specialty (only for Medicine, in case the operator does not find it in the previous list)	Open
tiptreb	Type of work	Open to exceptions of Psychology, Veterinary Medicine, Journalism, Medicine,Nursing, Pharmacy, Fine Arts and Architecture
ambPsic	Psychology work area	-2. Non applicable -1. Doesn't know, didn't answer 1. Educational 2. Social 3. Clinic 4. Organization 6. Others related 7. Others non related
ambcom	Audiovisual communication	-2. Non applicable -1. Doesn't know, didn't answer 1. Manager/producer 2. Engineering technician (realisation, edition) 3. Language technician (editor, script writer, journalist) 4. Institutional communication technician 5. Image 6. Others related 7. Others non related
ambVeter	Veterinary area	-2. Non applicable -1. Doesn't know, didn't answer 1. Small animals 2. Big animals 3. Hygiene and security 6. Others related 7. Others non related

Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
ambPerio	Journalism area	-2. Non applicable -1. Doesn't know, didn't answer 1. Press 2. Radio and television 3. Agencies 4. Communication offices 6. Others related 7. Others non related
ambMed	Medicine work area	-2. Non applicable -1. Doesn't know, didn't answer 1. General assistance 2. Specialist assistance 3. Non assistencial (R+D, laboratory companies, etc.) 6. Others related 7. Others non related
ambInfer	Nursing work area	-2. Non applicable -1. Doesn't know, didn't answer 1. Hospital 2. Primary assistance in general 3. Elderly assistance 6. Others related 7. Others non related
ambFarm	Pharmacy work area	-2. Non applicable -1. Doesn't know, didn't answer 1. Hospital pharmacy office 2. Commercial pharmacy office 3. Chemistry industry of medication production 4. Cosmetic chemistry industry 6. Others related 7. Others non related
ambBbAr	Fine Arts work area	-2. Non applicable -1. Doesn't know, didn't answer 1. Educational (teaching) 2. Design / graphic technic / publicity and image / animation 3. Business 4. Paint, sculpture, drawing 5. Guide/monitor 6. Others related 7. Others non related
ambArq	Architecture work area	-2. Non applicable -1. Doesn't know, didn't answer 1. Housing 2. Complex (entertainment, industrial) 3. Public buildings (museums...) 6. Others related 7. Others non related

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Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Work record		
ant_Lab	Work during studies and relation between work and studies	-2. Non applicable -1. Doesn't know, didn't answer 1. Full-time studies or with an intermittent job 2. Part-time job related to the studies 3. Part-time job non related to the studies 4. Full-time job related with studies 5. Full-time job non related to the studies
solaf	Is your first job your current job?	-2. Non applicable -1. Doesn't know, didn't answer 1. Yes 2. No
temps1a	Time dedicated in looking for the first job.	-2. Non applicable -1. Doesn't know, didn't answer 1. I had a job before finishing my 2. Less than a month 3. From 1 to 3 months 4. From 4 to 6 months 5. From 7 months up to 1 year 6. More than 1 year
viaAcc1	Access way to the first job	-2. Non applicable -1. Doesn't know, didn't answer 1. Contacts (personal, family...) 2. Press advertisements 3. public contest 4. Catalan occupational service / INEM 5. Company creation or own office 6. Study practices 7. University services 8. ETT (temporary job office) 9. Selection companies 10. Internet 11. Others
Current job		
anyini	Starting year of the current job	-2. Non applicable -1. Doesn't know, didn't answer Two last digits
requisit	Level of required studies for the last job	-2. Non applicable -1. Doesn't know, didn't answer 1. Specific degree 2. University degree 3. No qualification
funprop1	Are the functions suitable with the required qualification?	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes (suitable functions)
funprop2	Do the functions require a university degree?	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes (suitable functions)
branca	Economic activity branch of the company	-2. Non applicable -1. Doesn't know, didn't answer 26 codes (*See Table 2*)
Descbranca	Open description of the activity branch	Open

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Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Current job		
fdir	Management functions: own business, management/production, financial...	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
fcomer	Business and distribution functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
fenseny	Teacher functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
f_rd	R+D functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
fassist	Social and medical assistance functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
fdisseny	Design functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
ftec	Support technician functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
f_altraq	Other qualification functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1.Yes
f_al_noq	Other non-qualification functions	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
tipcontra	Type of contract	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes 1. Permanent 2. Freelance 3. Temporary 4. Scholar 5. No contract
durcontr	Period of contract	-2. Non applicable -1. Doesn't know, didn't answer 1. Less than 6 months 2. Between 6 months and 1 year 3. Between 1 and 3 years 4. Autoocupation 5. Without contract
treball	Types of freelance	-2. Non applicable -1. Doesn't know, didn't answer 1. Own account 2. Foreing account
jorn_tc	P13. Full-time job	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
ambit	Company area	-2. Non applicable -1. Doesn't know, didn't answer 1. Public 2. Private

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Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Current job		
guanys	Gross annual income	-2. Non applicable -1. Doesn't know, didn't answer 1. Less than 9,000 EUR 2. Between 9,000 and 12,000 EUR 3. Between 12,000 and 18,000 EUR 4. Between 18,000 and 30,000 EUR 5. Between 30,000 and 40,000 EUR 6. More than 40,000 EUR
numtreb	Number of workers	-2. Non applicable -1. Doesn't know, didn't answer 1. Less than 10 2. Between 11 and 50 3. Between 51 and 100 4. Between 101 and 250 5. Between 251 and 500 6. More than 500
lloctreb	Workplace	-2. Non applicable -1. Doesn't know, didn't answer 1. Barcelona 2. Tarragona 3. Girona 4. Lleida 5. Rest of autonomous communities 6. Europe 7. Rest of the world
satisf1	Job functions satisfaction	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (in total disagreement) to 7 (in total agreement)
satisf2	Satisfaction with the improvement perspectives	-2. Non applicable-1. Doesn't know, didn't answer Scale of 1 (in total disagreement) to 7 (in total agreement)
satisf3	Satisfaction with the income level	-2. Non applicable-1. Doesn't know, didn't answer Scale of 1 (in total disagreement) to 7 (in total agreement)
satisf4	Satisfaction with the knowledge usefulness	-2. Non applicable-1. Doesn't know, didn't answer Scale of 1 (in total disagreement) to 7 (in total agreement)
satisf5	General satisfaction with current job	-2. Non applicable-1. Doesn't know, didn't answer Scale of 1 (in total disagreement) to 7 (in total agreement)

Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Contract factors		
empleab1	Theorical knowledges	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab2	Practical knowledges	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab3	Languages training (to know languages)	Scale of 1 (non important) to 7 (very important)
empleab4	Computer and new technologies	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab5	Personality, social abilities	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab6	Management and planification capacity	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab7	Team work capacity	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
empleab8	Global university training	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
Assessment on the training suitability **Level of the received training**		
nteor	Theorical training	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
npra	Practical training	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ncoral	Oral expression	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ncescr	Writing expression	-2. Non applicable- 1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)

Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Assesment on the training suitability **Level of the received trainning**		
nequip	Teamwork	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
nlider	Leadership	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
nsolprob	Problem solution	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
npresdec	Decision taking	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ncreat	Creativity	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
npteCrit	Critical thinking	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ngestio	Management	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ninform	Computer	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
nidiom	Languages	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ndoc	Documentation abilities	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ateor	Theorical training	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
apra	Practical training	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
acoral	Oral expression	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
acescri	Writing expression	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
aequip	Team work	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)

Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Assesment on the training suitability **Level of the received trainning**		
alider	Leadership	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
asolProb	Problem solution	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
apresDec	Decision taking	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
acreat	Creativity	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
apteCrit	Critical thinking	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
agestio	Management	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
ainform	Computer	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
aidiom	Languages	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
adoc	Documentation abilities	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (very low) to 7 (very high)
Satisfaction with degree and job		
reptcarr	Would you repeat a degree?	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
reptuniv	Would you repeat university?	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
Continued studies		
contestu	Continued studies	-2. Non applicable -1. Doesn't know, didn't answer 1. No 2. Yes, specialized courses 3. Yes, an undergraduate degree 4. Yes, a post-graduate degree 5. Yes, a Ph.D 6. Yes, Others
matuni	Same university	-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes

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Table I | Database variables (*continuation from previous page*)

Variable name	Description	Codification
Mobility		
mobilit	Mobility	-2. Non applicable -1. Doesn't know, didn't answer 1. No 2. Yes, during studies 3. Yes, at work 4. Studies and work
Unemployment		
recercaf	Work search	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
motiusno	Reasons for not looking for a job	1. Continue studying / public contest 2. Maternity/family 3. Others
expec	Job expectations (in case of maternity)	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
atur_t	Time past since looking for a job	-2. Non applicable-1. Doesn't know, didn't answer 1. Less than 6 months 2. Between 6 months and 1 year 3. Between 1 and 2 years 4. More than 2 years 5. Not looking for a job
a_mitj1	Personal contacts	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj2	Personal initiative	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj3	Press advertisements	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj4	Public contest	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj5	Catalan occupational service	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj6	Create an own company	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj7	University occupational services	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj8	Educational cooperation agreements	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj9	Professional association	-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes

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Table I | Database variables (*continuation from previous page*)

Variable name	Description			Codification
Unemployment				
a_mitj10	Internet			-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_mitj11	Others			-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
a_nocerc	Not searching for a job			-2. Non applicable-1. Doesn't know, didn't answer 0. No 1. Yes
Graduates importance assessment on the following elements regarding the difficulty of searching for a job				
a_dific1	Deficiencies in the received training	Yes	Yes	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific2	Personal activities that unable to work (continue studying, family...)	Yes	Yes	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific3	Lack of professional experience	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific4	Have a job that I like	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific5	Lack of knowledge of the labour market	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific6	Have an adequate income	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific7	Lack of languages	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
a_dific8	Lack of computer knowledge	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)

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Table I | Database variables (*continuation from previous page*)

Variable name	Description			Codification
Graduates importance assessment on the following elements regarding the difficulty of searching for a job				
a_dific9	Lack of other knowledges	Yes	Yes (reordenated)	-2. Non applicable -1. Doesn't know, didn't answer Scale of 1 (non important) to 7 (very important)
nrebuig	Number of declined jobs	Yes	Yes	-2. Non applicable -1. Doesn't know, didn't answer From 0 to 7 8. More than 7
Socio-family status				
rdte	University academic performance			-1. Doesn't know, didn't answer 1. C 2. B 3. A 4. Distinction
nivest	Highest parent's study level			-2. Non applicable -1. Doesn't know, didn't answer 1. Both primary studies/ without studies 2. One of them has medium studies 3. Both have medium studies 4. One of them has higher education studies 5. Both have higher education studies
p_compte	Father's work by own or foreign account			-2. Non applicable -1. Doesn't know, didn't answer 1. Own account 2. Foreign account 3. It does not correspond
p_prop_n	Father's own account work: required level of studies			-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
p_alie_n	Father's foreign account work: job required level of studies			-2. Non applicable -1. Doesn't know, didn't answer 1. Executive/Management 2. Upper technician 3. Qualified 4. Non qualified 5. Others
m_compte	Mother's work by own or foreign account			-2. Non applicable -1. Doesn't know, didn't answer 1. Own account 2. Foreign account 3. Does not correspond
m_prop	Mother's own account work: required level of studies			-2. Non applicable -1. Doesn't know, didn't answer 0. No 1. Yes
m_alie_n	Mother's foreign account work: job required level of studies			-2. Non applicable -1. Doesn't know, didn't answer 1. Management 2. Superior technician 3. Qualified 4. Non qualified 5. Others

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ANNEX III. CHARTS OF AREAS AND SUBAREAS

The five following charts show the education groups by areas and subareas, and the coding of these three aggregations.

Humanities area			
Code	**Type**	**Degrees/studies**	**Subarea name (code)**
10101	Ll.[81]	Social and Cultural Anthropology	
10102	Ll.	Geography	
10103	Ll.	History	
10104	Ll.	Art History	Geography and History Area (101)
10105	Ll.	Music History and Science	
10106	Ll.	East Asian Studies	
10120	Ll.	Geography and History	
10201	Ll.	Philosophy	
10202	Ll.	Humanities	Philosophy and Humanities (102)
10301	Ll.	Linguistics	
10302	Ll.	Lite.Theor. and Compared Lite.	
10401	Ll.	Catalan Phylology	
10402	Ll.	Hispanic Phylology	
10501	Ll.	German Phylology	
10502	Ll.	English Phylology	
10503	Ll.	French Phylology	
10504	Ll.	Galician Phylology	
10505	Ll.	Italian Phylology	
10506	Ll.	Portuguese Phylology	Philologies and Compared Studies (103)
10507	Ll.	Translation and Interpretation	
10508	Ll.	Translation and Interpretation. German	
10509	Ll.	Translation and Interpretation. English	
10510	Ll.	Translation and Interpretation. French	
10601	Ll.	Arab Phylology	
10602	Ll.	Classic Phylology	
10603	Ll.	Slavic Phylology	
10604	Ll.	Hebrew Phylology	
10605	Ll.	Romanic Phylology	
10801	Ll.	Fine Arts	Fine Arts (108)

[81] Ll.: Graduate of a 4-5 year *llicenciatura* undergraduate programme.

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Social Sciences area			
Code	**Type**	**Degrees/studies**	**Subarea name (code)**
20101	Ll.	Business Admin. and Management	
20102	Ll.	Economics	Economics , Business Administration and
20103	Ll.	Actuarial and Financial Sciences	and Management and Business
20104	Ll.	Market Research and Techniques	Sciences (201)
20201	Dipl.[82]	Business Sciences	
20301	Ll.	Law	
20401	Dipl.	Labour Relations	
20402	Dipl.	Social work	
20403	Ll.	Labour Sciences	Law, Labour Relations and Political
20501	Dipl.	Public Management and Administration	Sciences (202)
20502	Ll.	Political Science and Administration	
20503	Ll.	Sociology	
20601	Ll.	Audio-visual Communication	
20602	Ll.	Journalism	
20603	Ll.	Advertising and Public Relations	Communication and Information
20701	Dipl.	Librarianship and Documentation	Science (203)
20702	Ll.	Documentation	
20801	Ll.	Psychology	
20901	Ll.	Pedagogy	Psychology and Education Studies (204)
20902	Ll.	Psycho-pedagogy	
21001	Dipl.	Teacher - Special Education	
21002	Dipl.	Teacher - Physical Education	
21003	Dipl.	Teacher - Pre-School (Infant)	
21004	Dipl.	Teacher- Musical Education	Teacher (210)
21005	Dipl.	Teacher- Foreign Languages	
21006	Dipl.	Teacher- Elementary Education	
21007	Dipl.	Social Education	
21101	Dipl.	Tourism	Tourism (211)

[82] Dipl.: Graduate of a 3-year *diplomatura* undergraduate programme.

Experimental Sciences area

Code	Type	Degrees/studies	Subarea name (code)
30101	Ll.	Chemistry	Chemistry (301)
30102	Ll.	Oenology	
30201	Ll.	Biology	
30202	Ll.	Biochemistry	
30203	Ll.	Environmental Sciences	Biology and Nature (302)
30204	Ll.	Geology	
30205	Ll.	Biotechnology	
30301	Ll.	Physics	
30302	Ll.	Mathematics	
30303	Dipl.	Statistics	Physics and Mathematics (303)
30304	Ll.	Statistical Sciences and Techniques	

Health Sciences area

Code	Tipus	Degrees/studies	Subarea name (code)
40101	Dipl.	Physiotherapy	
40102	Dipl.	Nursing	
40103	Dipl.	Speech Therapy	
40104	Dipl.	Human Nutrition and Dietetics	Nursing (401)
40105	Dipl.	Optics and Optometry	
40106	Dipl.	Podology	
40107	Dipl.	Occupational Therapy	
40201	Ll.	Medicine	Medicine and Dentistry (402)
40202	Ll.	Dentistry	
40301	Ll.	Pharmacy	Pharmacy,Science and Food Technology (403)
40302	Ll.	Science and Food Technology	
40401	Ll.	Veterinary Medicine	Veterinary Medicine (404)

Technical area			
Code	**Type**	**Degrees/studies**	**Subarea name (code)**
50101	Arq.[83]	Architecture	Architecture (501)
50102	Arq. Techn.[84]	Architecture	
50201	Techn. Eng.[85]	Mine Engineering	Civil Engineering and Technical Civil Engineering area (502)
50202	Techn. Eng.	Public Works (Civil)	
50203	Techn. Eng.	Public Works(Hydrology)	
50204	Techn. Eng.	Public Works(Transport)	
50205	Techn. Eng.	Public Works	
50206	Techn. Eng.	Topography	
50301	Eng.[86]	Geological Engineering	
50302	Eng.	Roads, channels and harbours Engineering	
50401	Dipl.	Naval Machinery	Nautical Sciences area (503)
50402	Dipl.	Maritime Navigation	
50403	Techn. Eng.	Naval (propulsion and services)	
50404	Ll.	Naval Machinery	
50405	Ll.	Nautical Sciences and Sea Transport	
50406	Ll./Dipl.	Civil Maritime	
50501	Techn. Eng.	Industrial (Electricity)	Technical area Advanced Production Technologies
50502	Techn. Eng.	Industrial (Industrial Electronics)	
50503	Techn. Eng.	Industrial (Mechanical)	
50504	Techn. Eng.	Industrial (Chemistry)	Advanced Production Technologies area (504)
50505	Techn. Eng.	Industrial (Textile)	
50506	Techn. Eng.	Industrial Design	
50520	Techn. Eng.	Industrial	
50601	Eng.	Industrial	
50602	Eng.	Chemistry	
50603	Eng.	Industrial Organization	
50604	Eng.	Materials	
50605	Eng.	Industrial Technology and Production	

[83] Arq.: 5-year Arquitecture programme.

[84] Arq. Techn.: 3-year Arquitecture programme.

[85] Techn. Eng.: 3-year Engineering programme.

[86] Eng.: 4-5-year Engineering programme.

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	Technical area (*continuation from previous page*)		
Code	Type	Degrees/studies	Subarea name (code)
50701	Techn. Eng.	Telecom. (Telecom. Systems)	
50702	Techn. Eng.	Telecommunications Technical Engineering (Electronic Systems)	
50703	Techn. Eng.	Telecom. (Sound and Image)	Technical area Information and
50704	Techn. Eng.	Telecom. (Telematics)	Communication
50705	Techn. Eng.	Computer Management	Information and Communication
50706	Techn. Eng.	Computer Systems	area (505)
50720	Techn. Eng.	Telecommunication	
50801	Eng.	Telecommunication	
50802	Eng.	Computer Engineering	
50803	Eng.	Electronic Engineering	
50901	Techn. Eng.	Agricultural (Agricultural Expl.)	
50902	Techn. Eng.	Agricultural Technology (Horticulture, Fruiticulture and Gardening)	
50903	Techn. Eng.	Agricultural Technology (Food and Agro-Industries)	
50904	Techn. Eng.	Agricultural (Rural Mechanisation and Construction)	Technical area Agricultural Agricultural area (506)
50905	Techn. Eng.	Agricultural Technology (Forest Resources)	
50906	Techn. Eng.	Forestry (Forest Industries)	
50920	Techn. Eng.	Agricultural	
51001	Eng.	Agronomy	
51002	Eng.	Forestry	

ANNEX IV. COMPLEMENTARY RESULTS

Table II | **Employment, unemployment and inactivity rate(women, men and total)**

	Humanities		Social Sciences		Health Sciences		Experimental Sciences		Technical area		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Women												
Employment rate	89.1*		94.5*		89.3*		95.3*		93.8		93.29	
Unemployment rate	5.8*	1,170	2.6*	3,924	3.4	618	2.1*	1,048	2.7	741	3.09	7,501
Inactivity rate	5.1*		2.9*		7.3*		2.6		3.5		3.61	
Men												
Employment rate	90.1*		93.2		92.2		95.1		95.5*		93.84	
Unemployment rate	5.6*	534	3.8	1,550	2.3	397	2	245	2.2*	2,031	3.11	4,757
Inactivity rate	4.3		3		5.5*		2.9		2.3*		3.05	
total												
Employment rate	89.4*		94.2*		90.4*		95.3*		95*		93.51	
Unemployment rate	5.8*	1,704	2.9	5,474	3	1,015	2.1*	1,293	2.4*	2,772	3.10	12,258
Inactivity rate	4.8*		2.9*		6.6*		2.6		2.6*		3.39	

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Table III | Reasons for not searching for a job, by gender and area

Gender				Continue studies / public contest	Maternity / home	Others	Total
				Reasons for not searching for a job			
Women	Area code	Humanities	Recount	32	12	15	59
			% Area code	54.2%	20.3%	25.4%	100.0%
		Social Sciences	Recount	66	22	26	114
			% Area code	57.9%	19.3%	22.8%	100.0%
		Experimental Sciences	Recount	38	2	5	45
			% Area code	84.4%	4.4%	11.1%	100.0%
		Health Sciences	Recount	12	7	8	27
			% Area code	44.4%	25.9%	29.6%	100.0%
		Technical area	Recount	21	3	2	26
			% Area code	80.8%	11.5%	7.7%	100.0%
		Total	Recount	169	46	56	271
			% Area code	62.4%	17.0%	20.7%	100.0%
Men	Area code	Humanities	Recount	15	0	8	23
			% Area code	65.2%	0%	34.8%	100.0%
		Social Sciences	Recount	31	1	14	46
			% Area code	67.4%	2.2%	30.4%	100.0%
		Experimental Sciences	Recount	17	0	5	22
			% Area code	77.3%	0%	22.7%	100.0%
		Health Sciences	Recount	3	0	4	7
			% Area code	42.9%	0%	57.1%	100.0%
		Technical area	Recount	34	1	12	47
			% Area code	72.3%	2.1%	25.5%	100.0%
		Total	Recount	100	2	43	145
			% Area code	69.0%	1.4%	29.7%	100.0%

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Table IV | Reasons for not searching for a job, by gender and area

	Permanent		Freelance		Temporary		Scholar		No contract		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	Total
Women											
Humanities	530	46.1%	84	7.3%	480	41.8%	40	3.5%	15	1.3%	1,149
Social Sciences	2,383	61.3%	161	4.1%	1,274	32.8%	53	1.4%	19	0.5%	3,890
Experimental Sciences	282	47.9%	7	1.2%	224	38.0%	75	12.7%	1	0.2%	589
Health Sciences	542	52.0%	128	12.3%	351	33.7%	17	1.6%	5	0.5%	1,043
Technical area	431	58.9%	76	10.4%	202	27.6%	21	2.9%	2	0.3%	732
Total	4,168	56.3%	456	6.2%	2,531	34.2%	206	2.8%	42	0.6%	7,403
Men											
Humanities	243	46.2%	50	9.5%	186	35.4%	33	6.3%	14	2.7%	526
Social Sciences	1,006	65.5%	130	8.5%	370	24.1%	21	1.4%	10	0.7%	1,537
Experimental Sciences	186	47.9%	17	4.4%	121	31.2%	63	16.2%	1	0.3%	388
Health Sciences	126	51.9%	37	15.2%	72	29.6%	6	2.5%	2	0.8%	243
Technical area	1,369	67.9%	227	11.3%	364	18.1%	54	2.7%	1	0.0%	2,015
Total	2,930	62.2%	461	9.8%	1,113	23.6%	177	3.8%	28	0.6%	4,709

Table V | Type of contract for women and men by subareas

	Women										Total
	Permanent		Freelance		Temporary		Scholar		No contract		
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	
Geography and History	193	52.30%	24	6.50%	134	36.31%	14	3.79%	4	1.08%	369
Philosophy and Humanities	58	52.73%	5	4.55%	42	38.18%	5	4.55%	0	0.00%	110
Philologies and Comparative Studies	253	42.95%	43	7.30%	265	44.99%	20	3.40%	8	1.36%	589
Fine Arts	26	32.10%	12	14.81%	39	48.15%	1	1.23%	3	3.70%	81
Economics, Bus. Administration and Management and Bus. Sciences	721	82.49%	24	2.75%	123	14.07%	5	0.57%	1	0.11%	874
Law, Labour Relations and Political Sciences	574	61.00%	72	7.65%	266	28.27%	19	2.02%	10	1.06%	941
Communication and Information Science	167	56.23%	18	6.06%	105	35.35%	5	1.68%	2	0.67%	297
Psychology and Education Studies	275	51.50%	34	6.37%	208	38.95%	14	2.62%	3	0.56%	534
Teacher	611	51.09%	12	1.00%	560	46.82%	10	0.84%	3	0.25%	1,196
Tourism	35	72.92%	1	2.08%	12	25.00%	0	0.00%	0	0.00%	48
Chemistry	92	67.15%	1	0.73%	35	25.55%	9	6.57%	0	0.00%	137
Biology and Nature	136	38.64%	6	1.70%	152	43.18%	57	16.19%	1	0.28%	352
Physics and Mathematics	54	54.00%	0	0.00%	37	37.00%	9	9.00%	0	0.00%	100

	Men									Total
	Permanent		Freelance		Temporary		Scholar		No contract		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	
Geography and History	137	49.46%	23	8.30%	93	33.57%	20	7.22%	4	1.44%	277
Philosophy and Humanities	39	48.15%	8	9.88%	23	28.40%	5	6.17%	6	7.41%	81
Philologies and Comparative Studies	57	42.22%	13	9.63%	57	42.22%	7	5.19%	1	0.74%	135
Fine Arts	10	30.30%	6	18.18%	13	39.39%	1	3.03%	3	9.09%	33
Economics, Bus. Administration and Management and Bus. Sciences	533	78.27%	45	6.61%	94	13.80%	7	1.03%	2	0.29%	681
Law, Labour Relations and Political Sciences	265	62.06%	56	13.11%	89	20.84%	12	2.81%	5	1.17%	427
Communication and Information Science	53	44.92%	15	12.71%	48	40.68%	0	0.00%	2	1.69%	118
Psychology and Education Studies	42	56.76%	7	9.46%	23	31.08%	2	2.70%	0	0.00%	74
Teacher	108	47.16%	5	2.18%	115	50.22%	0	0.00%	1	0.44%	229
Tourism	5	62.50%	2	25.00%	1	12.50%	0	0.00%	0	0.00%	8
Chemistry	60	60.61%	4	4.04%	20	20.20%	14	14.14%	1	1.01%	99
Biology and Nature	70	39.77%	8	4.55%	63	35.80%	35	19.89%	0	0.00%	176
Physics and Mathematics	56	49.56%	5	4.42%	38	33.63%	14	12.39%	0	0.00%	113

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Table V | Type of contract for women and men by subareas
(*continuation from previous page*)

	Women										Total
	Permanent		Freelance		Temporary		Scholar		No contract		
	n	%	n	%	n	%	n	%	n	%	
Nursing	279	49.03%	77	13.53%	210	36.91%	1	0.18%	2	0.35%	569
Medicine and Dentistry	102	42.86%	33	13.87%	94	39.50%	8	3.36%	1	0.42%	238
Pharmacy,Science and Food Technology	133	73.48%	9	4.97%	31	17.13%	7	3.87%	1	0.55%	181
Veterinary Medicine	28	50.91%	9	16.36%	16	29.09%	1	1.82%	1	1.82%	55
Architecture	38	33.63%	54	47.79%	20	17.70%	1	0.88%	0	0.00%	113
Civil Engineering	34	55.74%	2	3.28%	19	31.15%	5	8.20%	1	1.64%	61
Nautical Sciences	10	83.33%	0	0.00%	2	16.67%	0	0.00%	0	0.00%	12
Advanced Production Technologies	162	69.83%	6	2.59%	60	25.86%	3	1.29%	1	0.43%	232
Information and Communication	114	75.00%	4	2.63%	31	20.39%	3	1.97%	0	0.00%	152
Agricultural	73	45.06%	10	6.17%	70	43.21%	9	5.56%	0	0.00%	162

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	Men									Total
	Permanent		Freelance		Temporary		Scholar		No contract	
	n	%	n	%	n	%	n	%	n	%	
Nursing	42	45.65%	21	22.83%	28	30.43%	0	0.00%	1	1.09%	92
Medicine and Dentistry	51	54.84%	9	9.68%	32	34.41%	1	1.08%	0	0.00%	93
Pharmacy,Science and Food Technology	20	54.05%	6	16.22%	7	18.92%	3	8.11%	1	2.70%	37
Veterinary Medicine	13	61.90%	1	4.76%	5	23.81%	2	9.52%	0	0.00%	21
Architecture	66	35.29%	103	55.08%	18	9.63%	0	0.00%	0	0.00%	187
Civil Engineering	92	70.23%	5	3.82%	27	20.61%	7	5.34%	0	0.00%	131
Nautical Sciences	17	60.71%	0	0.00%	10	35.71%	1	3.57%	0	0.00%	28
Advanced Production Technologies	521	73.80%	54	7.65%	117	16.57%	14	1.98%	0	0.00%	706
Information and Communication	565	75.03%	34	4.52%	125	16.60%	29	3.85%	0	0.00%	753
Agricultural	108	51.43%	31	14.76%	67	31.90%	3	1.43%	1	0.48%	210

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Table VI | Differences between men and women in the type of contract by subareas

	Differences (% men - % women)			
	Dif. perm.	Dif. temp.	Dif. freel.	Dif. scholars
Geography and History	-2.85%	-2.74%	1.80%	3.43%
Philosophy and Humanities	-4.58%	-9.79%	5.33%	1.63%
Philologies and Comparative Studies	-0.73%	-2.77%	2.33%	1.79%
Fine Arts	-1.80%	-8.75%	3.37%	1.80%
Economics, Business Administration and Management and Business Sciences	-4.23%	-0.27%	3.86%	0.46%
Law, Labour Relations and Political Sciences	1.06%	-7.42%	5.46%	0.79%
Communication and Information Science	-11.31%	5.32%	6.65%	-1.68%
Psychology and Education Studies	5.26%	-7.87%	3.09%	0.08%
Teacher	-3.93%	3.40%	1.18%	-0.84%
Tourism	-10.42%	-12.50%	22.92%	0.00%
Chemistry	-6.55%	-5.35%	3.31%	7.57%
Biology and Nature	1.14%	-7.39%	2.84%	3.69%
Physics and Mathematics	-4.44%	-3.37%	4.42%	3.39%
Nursing	-3.38%	-6.47%	9.29%	-0.18%
Medicine and Dentistry	11.98%	-5.09%	-4.19%	-2.29%
Pharmacy and Food Science and Technology	-19.43%	1.79%	11.24%	4.24%
Veterinary Medicine	11.00%	-5.28%	-11.60%	7.71%
Architecture	1.67%	-8.07%	7.29%	-0.88%
Civil Engineering	14.49%	-10.54%	0.54%	-2.85%
Nautical Sciences	-22.62%	19.05%	0.00%	3.57%
Advanced Production Technologies	3.97%	-9.29%	5.06%	0.69%
Information and Communication	0.03%	-3.79%	1.88%	1.88%
Agricultural	6.37%	-11.31%	8.59%	-4.13%

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Table VII | **Average of monthly gross income by areas and cycles (only for those who work full-time). Result of the post-hoc test of multiple comparisons of Scheffé**

Gender Area Cycle	*n*	1	2	3	4	5
					Cluster for alfa = 0.05	
Women Hum. Lic.	711	1,561.2986				
Women Socials Grad.	1,662	1,576.7649				
Men Hum. Lic.	352	1,607.2443				
Women Health Grad.	393	1,609.4148				
Men Health Grad.	67	1,680.9701	1,680.9701			
Women ExSci Lic.	406	1,709.3596	1,709.3596			
Women Social Lic.	1,444	1,764.2255	1,764.2255	1,764.2255		
Men Social Grad.	533	1,782.8330	1,782.8330	1,782.8330		
Women ExSci Grad.	17	1,808.8235	1,808.8235	1,808.8235		
Women Technical area Grad.	315	1,850.9259	1,850.9259	1,850.9259		
Men ExSci Lic.	250	1,871.8333	1,871.8333	1,871.8333	1,871.8333	
Men Social Lic.	698	1,934.4556	1,934.4556	1,934.4556	1,934.4556	
Women Health Lic.	330		1,993.5606	1,993.5606	1,993.5606	1,993.5606
Men ExSci Grad.	19			2,100.8772	2,100.8772	2,100.8772
Men Technical area Grad.	927			2,108.0547	2,108.0547	2,108.0547
Men Health Lic.	92			2,137.6812	2,137.6812	2,137.6812
Women Technical area Lic.	280				2,242.2619	2,242.2619
Men Technical area Lic.	643					2,353.2919
Sig.		.053	.318	.053	.059	.086

We show the averages for the groups with homogenised clusters.

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Table VIII | Homogenised cluster results of the OQI

Combination of gender and subarea (clustered)	n	Clustered for alfa = 0.05			
		1	2	3	4
Men - Fine Arts	23	44.6860			
Women - Fine Arts	61	48.4973	48.4973		
Men - Geography and History	219	49.5941	49.5941		
Men - Philosophy and Humanities	60	49.5988	49.5988		
Men - Tourism	8	50.5787	50.5787	50.5787	
Women - Geography and History	280	50.8532	50.8532	50.8532	
Women - Philosophy and Humanities	85	51.6340	51.6340	51.6340	51.6340
Women - Tourism	44	52.3359	52.3359	52.3359	52.3359
Men - Communication and Information Science	102	56.4633	56.4633	56.4633	56.4633
Women - Philologies and Comparative Studies	466	56.5431	56.5431	56.5431	56.5431
Women - Veterinary Medicine	46	57.4275	57.4275	57.4275	57.4275
Women - Biology and Nature	259	57.7327	57.7327	57.7327	57.7327
Men - Philologies and Comparative Studies	113	58.2924	58.2924	58.2924	58.2924
Men - Psychology and Education Studies	60	58.3333	58.3333	58.3333	58.3333
Women - Communication and Information Science	250	58.3963	58.3963	58.3963	58.3963
Men - Biology and Nature	127	59.7186	59.7186	59.7186	59.7186
Women - Psychology and Education Studies	467	59.9829	59.9829	59.9829	59.9829
Men - Physics and Mathematics	93	60.7626	60.7626	60.7626	60.7626
Women - Law, Labour Relations and Political Sciences	796	61.3880	61.3880	61.3880	61.3880
Women - Agricultural	125	62.1185	62.1185	62.1185	62.1185
Women - Physics and Mathematics	86	62.3277	62.3277	62.3277	62.3277
Women - Nautical Sciences	11	62.4579	62.4579	62.4579	62.4579
Men - Law, Labour Relations and Political Sciences	364	62.8027	62.8027	62.8027	62.8027
Women - Chemistry	117	62.9946	62.9946	62.9946	62.9946
Men - Chemistry	75	63.0864	63.0864	63.0864	63.0864

Table VIII | Homogenic cluster results of the OQI (*continuation from previous page*)

Combination of gender and sub-area (clustered)	n	Clustered for alfa = 0.05			
		1	2	3	4
Men - Nursing	80	63.2176	63.2176	63.2176	63.2176
Women - Nursing	481	63.3229	63.3229	63.3229	63.3229
Men - Teacher	205	63.5230	63.5230	63.5230	63.5230
Men - Agricultural	193	64.0472	64.0472	64.0472	64.0472
Men - Veterinary Medicine	16	64.5255	64.5255	64.5255	64.5255
Men – Pharmacy,Science and Food Technology	29	64.6552	64.6552	64.6552	64.6552
Women - Teacher	1,032	65.1253	65.1253	65.1253	65.1253
Women - Advanced Production Technologies	208	65.3757	65.3757	65.3757	65.3757
Women - Economics, Business Administration and Management and Business Sciences	807	66.0046	66.0046	66.0046	66.0046
Men - Economics, Business Administration and Management and Business Sciences	602	66.6820	66.6820	66.6820	66.6820
Women - Pharmacy and Science and Food Technology	150	66.7840	66.7840	66.7840	66.7840
Men - Information and Communication	658	67.8304	67.8304	67.8304	67.8304
Women - Information and Communication	136		68.7023	68.7023	68.7023
Men - Advanced Production Technologies	627		70.8562	70.8562	70.8562
Men - Nautical Sciences	22		71.5067	71.5067	71.5067
Women - Medicine and Dentistry	205		71.6396	71.6396	71.6396
Women - Architecture	101			73.2948	73.2948
Men - Medicine and Dentistry	86			73.5357	73.5357
Women - Civil Engineering	51			73.6383	73.6383
Men - Civil Engineering	115				74.2190
Men - Architecture	168				74.2504
Sig.		.056	.056	.061	.089

We show the averages for the groups with homogenised clusters.

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Table IX | Part-time job rate by knowledge area, gender and public and private area

Company area	Women			Men			Total
	J. TP	%	Total	J. TP	%	Total	Dif. %
Public							
Humanities	121	27.50%	440	50	23.36%	214	-4.14%
Social Sciences	200	12.22%	1,637	47	10.68%	440	-1.54%
Experimental Sciences	34	21.25%	160	15	14.56%	103	-6.69%
Health Sciences	80	18.56%	431	14	13.73%	102	-4.84%
Technical area	21	13.04%	161	20	6.69%	299	-6.35%
Total	**456**	**16.12%**	**2,829**	**146**	**12.61%**	**1,158**	**-3.51%**
Private							
Humanities	166	25.04%	663	48	17.33%	277	-7.71%
Social Sciences	251	11.44%	2,195	68	6.34%	1,073	-5.10%
Experimental Sciences	32	9.04%	354	18	8.14%	221	-0.89%
Health Sciences	102	17.17%	594	16	11.85%	135	-5.32%
Technical area	27	4.91%	550	59	3.55%	1,661	-1.36%
Total	**578**	**13.27%**	**4,356**	**209**	**6.21%**	**3,367**	**-7.06%**

ANNEX V. TRANSFORMATION OF THE DIFFERENTIAL VARIABLES

Variables of entry to university information

In this group the variables that characterize the student are considered before the entry at university.

- *Access grade:* Collects the average of the access to the university grade by subareas of study. We use the variable focused on the global average (6.78).

- *Parent's educational level:* It is considered as an ordinal variable focused on the level. The categories are:

Parent's educational level	
0	Without studies or with primary studies
1	One of them with medium studies
2	Both with medium studies
3	One of them with higher education
4	Both of them with higher education

- *A-level:* It indicates if the entry itinerary was from A-level or not.

A-level	
0	No. It includes professional training, more than 25 years...
1	Yes. A-level

Variables of university progress

It refers to all variables that either characterizes the studies that they are doing, or collect information of the graduate during its studies.

- *Knowledge area*: Five dichotomous variables are constructed, one for each of the five knowledge areas.

Knowledge area
Humanities
Social Sciences
Experimental Sciences
Health Sciences
Technical area

- *Work record*: Three dichotomous variables are constructed, one for each of the following categories.

Work record
Full-time student
Student with degree-non-related-job
Student with degree-related-job

- *Mobility during the studies*: It indicates if during the studies there has been any experience of mobility.

Mobility during the studies	
0	No
1	Yes

■ *Academic record grade*: We use the variable based on the global average of 1.68.

Variables of added value

They correspond to the variables that, once the degree is finished, can "increase" the value of the OQI.

■ *Continue studying*: Dichotomous variable that collects if, after the degree, the student has continued studying.

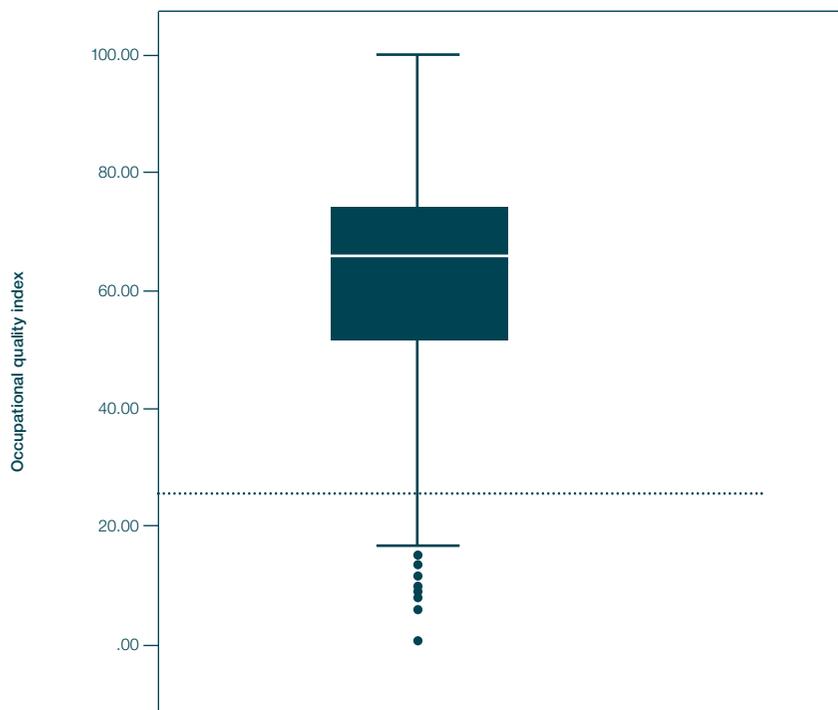| Continue studying |
| --- |
| 0   No |
| 1   Yes |

■ *Job mobility*: Dichotomous variable that indicates if the student has or has had any mobility experience.

Job mobility
0   No
1   Yes

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ANNEX VI. OCCUPATIONAL QUALITY INDEX BOX PLOT

ANNEX VII. PROFILE OF WOMEN WITH A LOWER THAN 25% OCCUPATIONAL INDEX

In total, in 2008 there are 201 women who graduated in the year 2005 with an OQI inferior to 25%.

Since we do not have personal information, that is, of external character to their work situation, we will only be able to portray this collective through the information collected in the survey. Like this:

- They are women that in the moment of the survey have between 25 and 30 years of age.

- 100% are employed in the moment of the survey:

  - 68.7% has a temporary contract, of which 55% has a contract with duration between 6 months and 1 year.

  - 66% does full-time working day and 72% works in the private sector.

  - 94.5% has no university-level functions in their job.

  - 80.1% has an income of approximately 1,000 Euros monthly.

  - The satisfaction with their job takes away a medium appraisal of 3.74 points with a deviation type of 1. 68 points.

  - When she asks herself if she would repeat the career, 52.6% says Yes.

  - 80% would repeat at the same university.

  - 76.1% continues their studies (30% a postgraduate course or a master, followed by 17% with specialized courses).

  - During their degree, 50% was a full-time student, 32.5% was a part-time student with a non-degree-related-job and the 17.5% was a part-time student with a degree-related-job.

ANNEX VIII. OTHER HIERARCHICAL MODELS

Model with descriptive variables of the work placement

Table X | Model with descriptive variables of the work placement

Occupational quality index	Parameter	Standard error	*t* / Wald statistic	*p*-value
Fix effects				
Constant	47.34	1.91	24.66	0.000
Technical area	9.37	2.40	3.89	0.001
Health Sciences	9.37	2.56	3.64	0.002
Experimental Sciences	4.72	2.76	1.70	0.108
Social Sciences	5.05	2.32	2.17	0.046
Humanities	-	-	-	-
Public area	1.65	0.70	2.32	0.020
Number of employees	0.94	0.13	6.88	0.000
Public area*num. of employees	-1.22	0.21	-5.62	0.000
Management functions	5.08	0.45	1.116	0.000
Leadership appraisal	0.71	0.14	4.97	0.000
Taking decisions appraisal	1.07	0.15	6.90	0.000
Random effects				
Residual (σ_e^2)	206.75	3.95	52.25	0.000
Subareas ($\sigma_{\mu_0}^2$)	11.26	4.69	2.40	0.016

Model with descriptive variables of the work placement

Table 9 | Model with descriptive variables of the work placement
(*continuation from previous page*)

Occupational quality index	Parameter	Standard error	*t* / Wald statistic	*p*-value
Fix effects				
Constant	47.85	1.85	25.76	0.000
Technical area	8.55	2.31	3.69	0.002
Health Sciences	8.89	2.45	3.62	0.002
Experimental Sciences	4.75	2.64	1.79	0.092
Social Sciences	4.38	2.22	1.97	0.068
Humanities	-	-	-	-
Degree-related-job	2.31	0.56	5.13	0.000
Non-degree-related-job	-2.46	0.71	-4.69	0.000
Full-time student	-	-	-	-
Degree	2.33	0.56	4.15	0.000
Public area	1.52	0.70	2.16	0.030
Number of employees	0.94	0.13	6.91	0.000
Public area*num. of employees	-1.25	0.21	-5.77	0.000
Management functions	4.93	0.45	10.90	0.000
Leadership appraisal	0.69	0.14	4.86	0.000
Decision taking appraisal	1.03	0.15	6.73	0.000
Random effects				
Residual (σ_e^2)	206.75	3.95	52.25	0.000
Subareas ($\sigma_{\mu_0}^2$)	11.26	4.69	2.40	0.016