From expansion to crisis: university pathways and professional insertion in the labour market[1]

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Abstract

This document focuses on the conclusions of a typological analysis on the occupational insertion of graduates of Catalan public universities in 2004 and 2007. The data come from a periodic survey on the labour market outcomes of graduates from Catalan universities, carried out by the Catalan University Quality Assurance Agency (AQU). A comparison element has been introduced in order to contrast labour market outcomes among graduates in 2004 (interviewed in the first quarter of 2008), who studied and made its labour insertion during a period of economic expansion in Spain and graduates in 2007 who completed their degrees about a year before the start of the recent economic crisis (interviewed in early 2011). Although we can see a decline in the employment rate of graduates as a whole, with regard only to occupied graduates no significant differences were found between the two cohorts.

Introduction

The university-to-work is one of the most important periods of young people in the construction of his or her adult life. However, it is well known that this transition is no longer a linear pathway (family-study-work) for most of the young. The specific way in which an individual transit into adulthood is the result is the result of the conjunction of three factors, with the same importance between them: personal decisions, social and cultural frames that could inspire those decisions (social class, gender, geographical origin, etc.) and institutional settings that limit and channel these same decisions (educational opportunities, strategies of employers who will recruit the individual, structure and preferences of the working population that the individual competes with, public youth employment policies, etc.).

In addition, in order to focus on a topic as complex as youth employability is essential to be establish within a historical angle (Sala et al., 2007), taking into account phenomena such as the educational expansion or the economic crisis

In this sense, the global economic crisis that began in 2008 and has lasted until the present moment is an element that has influenced the employability of university graduates. In the last years, Spain's youth unemployment rates have grown considerably. However analysts agree that the problem has stronger impact on the youth without post-secondary education or even more on those with unfinished secondary studies, owing to the fact that during the economic expansion period of the past years, employers used to offer well-paid jobs with no educational requirements (mostly in construction and services).

Furthermore, a recent research (Planas and Fachelli, 2010) concluded that Catalan Universities had played a positive role in equity and professional mobility of their graduates. Authors found that neither the social background nor the educational outcomes could clearly explain the inequality in labour outcomes of graduates. Only the gender appeared as an explicative variable of income differences between graduates.

In this paper two purposes are explored: a contribution to the knowledge of professional insertion of Catalan universities graduates and, secondly, a study on the impact of the recent economic crisis on their employability. A typological approach was used in order to clarify different labour market outcomes on two sets of graduates: the first one, during the economic growth in Spain (2004) and the second, previous to the outbreak of economic crisis (2007). Both populations were surveyed four years after graduation, in 2008 and 2011 respectively.

Data

Data from a periodical survey on graduates' labour market outcomes carried out since 2001 by The Catalan University Quality Assurance Agency (AQU Catalunya) was used to perform the typological analysis. In this research, the last two surveys were used: the first carried out in early 2008 with graduates

from 2004 cohort, and the second in early 2011 with the 2007 graduates (AQU Catalunya, 2008; 2011).

In the 2008 database, 96% of the sample came from public universities, while in 2011 survey data from private universities was introduced for the first time in the survey. In this sense, a different distribution of public-private graduates was resulted (80% public, 20% private). In order to avoid possible bias in the comparative analysis, for this particular research, only data referring to the public universities is analysed.

Table 1. Population, sample and sampling error (Public Universities)

2004 Cohort			2007 Cohort		
Population	Sample	Sampling error	Population	Sample	Sampling error
22.343	11.771	0.62%	22.191	12.219	0.59%

Source: Author's compilation based on AQU Catalunya (2008; 2011)

It is noteworthy to mention that both surveys used the same questionnaire, which addressed the following issues: job situation, job satisfaction, evaluation of factors influencing contracting, satisfaction with degree studies and its usefulness/suitability for the work, further studies, geographical mobility, academic performance, socioeconomic status and finally and specific section for unemployed graduates.

Methodology

Firstly, the main features of the whole graduates in relation to their work situation are presented. A descriptive analysis of general occupation situation is shown taking into account gender, social background, field of studies and combination of studies and work during the university experience. Secondly, a typological analysis on occupied graduates is proposed, with the aim to establish a differentiation regarding labour market outcomes. The typological analysis was carried out using two complementary statistical techniques: multiple correspondence analysis (MCA) and cluster analysis (CLA) (Fachelli 2010, López 1996,). The MCA helps to describe similarities or likenesses between individuals and relationships between qualitative variables, while automatic classification techniques allow grouping individuals and variables through different algorithms, having the possibility to avail themselves of the results of the ACM (Lebart, et al. 2000). Hence, the mentioned techniques offer the possibility of constructing complex, effective and useful descriptions of large data sets, organized in matrices that relate individuals and variables (Cornejo, 1989).

Graduates' job situation

In this section some general characteristics of Catalan universities graduates' work situation[2] four years after graduation are exposed. First, a simple typology of students regarding their occupational status is established: occupied, *internships*, inactive and unemployed.

Regarding the *internships*, we refer to those graduates who answered affirmatively to the question "do you work at present?" but in the question about contract type chose the "internship" answer. An internship contract may imply different modalities of approaching the labour market, being the most representatives the pre o postdoctoral grants or practice contracts in enterprises, with evident differences between them. Besides, we opted to separate *internships* from the rest of occupied students because they were not asked about some items in the questionnaire[3].

Graduates who reported not to be working at the time of the survey were divided into two groups: unemployed and active. The former are those whose graduates were not working but searching for a job, the latter are those who were not working neither looking forward to do it.

According to the data available, we note the impact of the economical crisis: the percentage of occupied graduates decreases from 90,6% in the 2004 cohort to 84,7% in the 2007 cohort. The impact can also be observed in the unemployed percentage that rises from 3.1 to 7.8%.

Table 2. Occupational status.

Occupational status	Cohort 2004		Cohort 2007	
	Cases	Percentage	Cases	Percentage
Occupied	10664	90,6	10349	84,7
Internships	343	2,9	477	3,9
Unemployed	362	3,1	957	7,8
Inactive	402	3,4	436	3,6
Total	11771	100,0	12219	100,0

Source: Author's compilation based on AQU Catalunya (2008; 2011)

Taking into account gender, we found that men have been more affected by the unemployment raise. While in the first cohort differences between men and women are observed in inactive and *internships*, in the second one the

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[2] Review AQU Catalunya 2008 and 2011 for a more complete presentation of surveys results. In addition, in the second reference the reader could review a historical evolution of different variables for the period of 2001-2011.
[3] They did not were asked about job satisfaction, factors influencing contracting, enterprise size and duration of working day.

differences are found regarding to occupation (higher for women) and unemployment (higher for men).

Table 3. Occupational status by gender. Percentages

Occupational status	Cohort 2004			Cohort 2007		
	Female	Male	Total	Female	Male	Total
Occupied	90,7	90,4	90,6	85,1	84,1	84,7
Internships	2,6	3,4	2,9	3,9	3,9	3,9
Unemployed	3,0	3,1	3,1	7,3	8,6	7,8
Inactive	3,7	3,0	3,4	3,6	3,5	3,6
Total	100	100	100	100	100	100

Source: Author's compilation based on AQU Catalunya (2008; 2011)

It is also important to analyse the impact of social background on the distribution of graduates' occupational status, in order to answer to questions such as: does the social class influences job situation of university graduates? Or, does graduates coming from families with higher educational background have a better insertion to labour market? Although, this issue requires further analysis, it is worth reviewing the major indicators of the relationship between social origin and occupational status.

Socioeconomic status was measured through two indicators: family educational and occupational background (i.e. the highest educational and occupational level attained by either one of the two parents). The educational background was classified in three categories considering the main educational levels: primary, secondary and tertiary, whereas the occupational status categories were grouped hierarchically into three levels: low, medium and high[4].

Table 4. Occupational status by family educational level. Percentages

Occupational status	Cohort 2004			Cohort 2007		
	Primary	Secondary	Higher education	Primary	Secondary	Higher education
Occupied	92,6	90,8	87,5	86,8	85,4	81,7
Internships	1,8	2,9	4,5	2,4	4,1	5,4
Unemployed	2,7	3,2	3,4	7,5	7,1	8,8
Inactive	2,8	3,1	4,6	3,3	3,4	4,0
Total	100	100	100	100	100	100

Source: Author's compilation based on AQU Catalunya (2008; 2011)

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[4] For further analysis on the relationship between social class and occupational success of graduates see Planas and Fachelli (2010). Moreover, this article explains the construction of the categories used for these two variables.

In table number 4, we can see that the higher the family educational background (at least one of the parents studied up to the third level), the more likely graduates are to be unemployed, *internships* and inactive, both in economic growth and in a context of economic crisis. This may be due to the fact that these graduates have more family resources to wait until they found an optimum alternative to work. This hypothesis is reinforced when we observe that it is precisely in the upper level where there is a higher increase in the proportion of unemployed people between the two surveys.

Regarding parents occupations, no large differences were found in the distribution of graduates' occupational status. In parents with higher occupational levels we can see smaller proportions of occupied graduates in both surveys, but added to the *internships*, the proportions are similar between the three levels, again in both surveys. With regard to unemployment, differences are less than a percentage point inside each survey and the rise in the proportion of unemployed is practically alike in all three categories.

Table 5. Occupational status by family occupational level. Percentages

Occupational status	Cohort 2004			Cohort 2007		
	Low level	Medium level	High level	Low level	Medium level	High level
Occupied	92,4	89,9	89,7	85,7	84,9	83,8
Internships	2	2,9	3,8	2,9	3,8	4,8
Unemployed	2,7	3,5	2,9	7,8	8,1	7,7
Inactive	3	3,7	3,5	3,6	3,2	3,7
Total	100	100	100	100	100	100

Source: Author's compilation based on AQU Catalunya (2008; 2011)

The Catalan University (Autonomous Community in Spain) system categorise the degrees in five subject areas: social sciences, engineering and architecture, health sciences, humanities, and experimental sciences. For this work, along with the line developed by GRET (Planas and Fachelli, 2010), the social sciences area was subdivided into two subject areas, because of the variability in employability outcomes observed among its graduates. Thus, degrees related to law, economics, business administration and business sciences were grouped into one independent area, while the rest of degrees remained in the social sciences area.

In this way, the distribution of occupational status according to the six subject areas is as follows:

Table 6. Occupational status by subject areas. Percentages.

Occupational status	Cohort 2004						Cohort 2007					
	SS	LEA	ES	EA	HS	H	SS	LEA	ES	EA	HS	H
Occupied	92,9	92,9	77,3	93,1	94,1	85,2	89,4	86,4	68,2	85,5	90,1	76,9
Internships	1,5	0,8	13,1	1,9	2,1	4,1	1,6	1,6	18	3,1	3,1	4,6
Unemployed	3,1	2,8	3	2,3	1,4	5,8	6,3	6,3	8,8	8,2	3,8	12,7
Inactive	2,6	3,5	6,6	2,6	2,4	4,9	2,7	2,7	5	3,2	3,0	2,7
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Author's compilation based on AQU Catalunya (2008; 2011)

SS: Social sciences
LEA: Law, economics and administration
ES: Experimental sciences
EA: Engineering and architecture
HS: Health sciences
H: Humanities

With regard to the level of occupation, all subject areas reported a lower percentage in the 2007 cohort than in 2004. The subject areas that present a greater decrease on employment rates are experimental sciences (9.1 points of difference), humanities (8.3 percentage points of difference) and engineering/architecture (decreased 7.6). In addition, these same subject areas are showing a further increase in unemployment. The increase in the number of *internships* (5 points) is also important with regard to experimental sciences area. The latter result can be read as a positive matter (as an increase in research training programs) or as a reflex of difficulties in finding a job on the labour market, and thus these graduates have taken refuge in the studies to deal with the period of economic crisis. Once made this clarification, it should be mentioned that the area of humanities is clearly the one that showed a lower level of occupation and a higher level of unemployment in both 2004 and 2007 cohorts.

Finally, we analyse the relationship between occupational status and the combination of studies and work during the university experience. This aspect involves many actors in the phenomenon that we are discussing: students, employers and managers of higher education institutions. There are several reasons to combine the studies (not asked in the survey), but the type of work (part-time or full time job, related or unrelated with the specialty) reflects different professional pathways decisions taken by young people.

Table 7. Occupational status by the combination of studies and work. Percentages

Occupational status	Cohort 2004					Cohort 2007				
	S	PR	PNR	FR	FNR	S	PR	PNR	FR	FNR
Occupied	88,7	95,2	90,4	95,4	92,9	81,6	87,6	82,9	91,5	88,7
Internships	4,5	2,1	2,7	1,1	0,9	6,6	3	4,3	1,4	1,3
Unemployed	3,3	1,4	4	2,1	3,9	8,3	6,9	9,5	4,9	7,8
Inactive	3,4	1,4	2,8	1,4	2,3	3,6	2,5	3,4	2,1	2,2
Total	100	100	100	100	100	100	100	100	100	100

Source: Author's compilation based on AQU Catalunya (2008; 2011)

S: Full-time students
PR: Part-time related job
PNR: Part-time nonrelated job

FR: Full-time related job
FNR: Full-time nonrelated job

As can be seen in table 7, full-time students have a lower level of occupation, compared to their peers who combined studies and work in any of the four forms mentioned previously. However, by adding the *internships* (which is a form of occupation) to occupied graduates the result changes significantly in both surveys. It is therefore necessary to review unemployment indicator to see how this phenomenon behaves.

The three groups that present a higher percentage of unemployment are those who worked in a job not related to their studies (both part-time and full-time) and full-time students. These three groups also show an increase of around 5 points in the percentage of unemployment between the two surveys. On the other hand, students who combined a part-time related job presented a significant rise of unemployment between the two generations (5.5 percentage points). The smaller increase in the proportion of unemployment can be seen in graduates who worked at a full-time job and related with their studies, whom mostly were enrolled at university once they were already working.

Typological analysis of occupied graduates

The previous section addressed some general features of the occupational status of graduates. It could be seen how even with the decrease in the level of occupation and with a significant increase in the proportion of unemployed graduates, most of the graduates reported to be occupied at the time of the survey. However, it is evident that the characteristics of the occupations show differences regarding the quality of jobs (AQU Catalunya 2008; 2011).

The surveys used for this work include a comprehensive list of variables that characterize the occupation of graduates. In order to perform the typological analysis, we proceeded first to differentiate the available labour variables according to their main characteristics, which can be seen in table 8.

Table 8. Classification of labour variables.

Occupational variables	Enterprise variables	Pathway variables
• Request of university degree. • Degree-level job. • Contract type. • Salaried or self-employment. • Full-time or part-time job. • Incomes.	• Branch of economic activity. • Enterprise size. • Access way to the labour market. • Workplace. • Public or private sector.	• Job tenure. • Number of jobs (one or more than one). • Moment of labour market entry. • Time taken to find the first job.

Source: Author's compilation based on AQU Catalunya (2008; 2011)

The occupational variables are those that allow us to establish the labour basic characteristics of graduates' job. From these variables it is possible to establish a hierarchy of occupational quality, since it includes variables that have been used for general comparisons among types of employment, especially in studies about precarious employment (Rodgers, 1989; Duell, 2004; Santamaría, 2009).

Secondly, five enterprise variables characterize the type of company in which graduates work. It should be noted that with the information available it is not possible, maybe not desirable, to establish a hierarchy of enterprises, since there is an enormous complexity with regard to the different types of companies existing in the labour market.

Despite the fact that we are not analysing surveys on labour trajectories, the third group of variables provides four indicators that permit us to know some features of their pathways: moment of entry to the current job with respect to the graduation (previous, during or after university), number of jobs (one or more than one), job tenure and time spent looking for the first job after graduation (when applicable).

In addition to differentiate the results of graduates employability, we wanted to know which groups were better placed than others, according to the available indicators. This explains why we opted to perform the multiple correspondence analysis (MCA) using as active variables, which define the axes of factorial analysis, the ones of the first group (occupational variables). The rest of labour market variables were used to illustrate the composition of groups.

Results of multiple correspondence analysis

The MCA was applied independently to the two samples. In both cases, the best solution was to retain the first three factorial axes, which explain the 64% of the variance[5] for the 2004 cohort and 66% for the 2007 cohort. The percentage of variance explained by each factor is presented in the table below.

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[5] The explained variance calculation was carried out taking into account the Greenacre method (2008).

Table 9. Percentage of explained variance.

Axe	Percentage of explained variance. Cohort 2004	Percentage of explained variance. Cohort 2007
1	35,83	38,83
2	20,42	18,92
3	7,65	8,25
Suma	63,4%	65,9%

A first remarkable aspect of the analysis is the match between the two surveys regarding the factorization of the space, so that practically the same amount of variance (around 65%) can be explained with the same number of axes. Also, the amount of variance explained by each axis has also a remarkable similarity. With regard to the phenomenon that we are discussing in this presentation, we can mention that despite the economic crisis, the situation of occupied graduates seen as a whole does not present significant differences between the two cohorts.

Due to space limitation in this paper, it is not possible to analyse deeply the composition of the axes, nor submit the graphics that illustrate the vectorial space, but generally the three factors are defined on the following features of the occupational situation of occupied graduates (valid both surveys): 1) salaried or self-employed job; 2) request of title and graduate/non-graduate level job and, 3) full-time or part-time job.

Cluster analysis

After having applied the MCA, we proceeded to perform the cluster analysis in order to obtain a typology of occupied graduates built from the data on labour market outcomes. Once analysed the different possibilities of partitions for the two samples, a classification into five groups was chosen. As expected from the factor analysis, the size and the composition of the groups do not differs significantly between surveys, reinforcing the idea developed previously: a remarkable change between the two samples of graduates is not observed.

Table 10. Composition of groups.

Cluster	Cohort 2004		Cohort 2007	
	Size	Percentage	Size	Percentage
1. Fixed-term contracts	4.535	42.5%	4.254	41.1%
2. Temporary contracts	2.365	22.2%	2.309	22.3%
3. Non-graduate-level jobs	2.323	21.8%	2.191	21.2%
4. Part-time jobs	808	7.6%	1.044	10.1%
5. Self-employed	633	5.9%	551	5.3%
Total	10664	100%	10349	100%

The names given to the groups come from the main characteristic that defines them. The first major division is determined by the contract relationship with the work: employed or self-employed job. The first four groups correspond to salaried workers while the fifth group is exclusively composed of self-employed ones.

The first group is mainly characterized by *fixed-term contracts*, graduates who have a successful labour market insertion considering the variables used for analysis: fixed-term contracts, in graduate-level jobs, with incomes that are above the average of the whole group and of course with full-time jobs. They work in the private sector, in financial o industrial enterprises and they develop "technical support" or managerial functions. Also, they studied degrees related to engineering/architecture or law/administration/economy areas. This group is slightly better characterised as a male group.

The second group, called here the *temporary contracts* group, is characterized by graduate-level jobs, variable earning levels (there is not a clear trend in this point as in the previous group), and temporary contracts mostly. In this group we have both full-time and part-time workers. They work primarily in education and culture in the public sector. In addition, the vast majority get their jobs after studies, made mostly in social sciences. As might be expected, this group is more represented by women.

Although employment research in Spain determines that the feature of working with temporary contracts is the one that best characterizes the labour precariousness, obviously we cannot compare graduates and non-graduates temporary employments. Even though a temporary contract represents a disadvantage with respect to the employment security, is well known that the temporary contract is often the gateway to permanent contracts, especially regarding university graduates.

The third group is the one we have called *non-graduate-level jobs*, because the title was not required and the graduates declare not to be using the skills acquired in the university to perform its labour activities. Despite this, most have

certain stability because of their fixed-term contracts. In this group we can identify a good proportion of graduates enrolled at university when they were already in the labour market, and in addition, we find a considerable percentage of graduates with long job tenures (from five to more than ten years). With regard to the level of earnings, they are below those who belong to the first group, but have a level very similar to second group.

The fourth group is characterized by having most of the *part-time* workers. Although it is a small group, it has increased its size by almost three percentage points from between the two analysed cohorts. In fact, this is the only group that is significantly different in proportion between cohorts, it rises from 7,6% to 10,1%. The majority of graduates work with temporary contracts and their earnings are clearly the lowest of all groups. To sum up, taking into account all of these features, we can say that it is the group with the worst work conditions.

Finally, the group of self-employment is characterized by autonomous contracts, as it could not be otherwise. Regarding the incomes, there is no specific pattern that characterized them. They work mostly in micro enterprises, carry out managerial functions (implying that are small entrepreneurs) in construction companies and they are mainly men who studied an engineering or architecture degree.

Conclusion

In this paper we review the impact of the economic crisis on graduates' employment. A first important result we emphasize is that the economic crisis has effectively had an impact on employment rates: the unemployment rate increased from 3.2% to 8.1% among higher education graduates. However, if we consider data from the EPAS [6] we can see that the evolution of unemployment rate of all Catalan population increased from 7.6% to 19% (by reference to the first quarter of 2008 and the first of 2011). Thus, we have an important indicator to confirm that graduates are one of the groups more protected against unemployment.

Moreover, it has shown a decreased of the proportion of graduates who work full-time (from 80% to 71%). This is reflected in the typology of graduates proposed in this paper, in which the only group that presented a significant change was precisely that of part-time workers.

Even so, one of the main findings found was that the general structure of employment of graduates has not suffered a very strong change between 2004 and 2007 cohorts. It is possible that graduates in 2007, although they were surveyed in the middle of economic crisis (2011) have found, at the end of the university studies, a favourable market that could absorb the majority of graduates. On the other hand, from the year 2010 Spain declined significantly the supply of public employment, due to intensification of economic crisis, but

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[6] Economically active population survey, carried out by The National Statistics Institute, INE-Spain.

this impact is not possible to appreciate within the data available in these surveys.

In future research, it will be important to develop possible related hypotheses to explain these findings, analysing the role played by the institutions and Governments in the promotion of the employment of the graduates. In addition, it will be important to incorporate aspects such as higher educational reforms (Bologna process) in the analysis of the employability of graduates trained within the reform.

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