University pathways and graduate labour market outcomes in Italy: What Matters Where?
Horizontal stratification of higher education, educational performance, previous work experience and labour market transition.

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Abstract: The first aim of this paper is to test whether graduates' qualifying elements (GQE), work experience during university and academic performance, are associated with better labour market outcomes. The second aim is to test whether these associations vary across fields of study, linked to different occupational contexts. We observe that different GQE protect from different risks: previous jobs reduce the unemployment and unstable job rates, while higher final marks reduce the risk of being overeducated. Graduates from the humanistic field of study experience lower trade-offs between working during university and academic performance; at the same time, they gain more occupational stability from previous work during university, but also greater risk of entrapment in the condition of being overeducated. These are relevant differences to the changing Italian context; considering the increasing rate of humanistic graduates and of unstable job positions, the detected differences among fields of study could change the graduate labour market transition.

Keywords: fields of study; graduates; labour market transition; students' jobs; educational performance.

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Introduction

In recent years, sociologists have paid growing attention to the horizontal stratification of tertiary education, namely the differences between fields of study with regard to labour market transition (Van der Verfhorst, 2008). The emergence of this new issue in social stratification research is mainly due to the significant increase in enrolments in tertiary education over the last decades. Also in Italy, during the 1990s and 2000s, we detect a significant increase in the number of degree-holders as well as the emergence of a number of studies focussing on these issues, analyzing the effects of fields of study on labour market outcomes (Ballarino, 2006; Ballarino and Bratti, 2006). At the same time, there is a huge amount of empirical analysis that investigates the relevance of many other graduate characteristics affecting the transition of graduates to the labour market (usually the final mark, regularity of graduation timing, etc) and shows that they are important in the Italian context (Biggeri et al., 2001; Bernardi, 2003). All of these research studies share the same general analytical approach: they estimate the mean effect of every single graduate qualifying element (GQE, hereafter) on graduate labour market outcomes. What we mean is that the analyses do not consider that the strength of the effects due to GQE could differ among groups and contexts.

On the other hand, the theories that suggest possible explanations of these effects are also rather general and they do not specify if and how they could vary among different occupational contexts, as underlined by Bills (2003). The theories usually applied in this research field (i.e. signalling and job competition model) tend to ignore that there are marked differences between the different labour *markets* the graduates may enter. At the same time, we observe that there is in this literature the need of a classification of the different graduate labour markets and that there are some attempts in this direction (Elias and Purcell, 2004).

The aim of this paper is to check whether there is empirical evidence of the interaction between graduates' many qualifying elements and the occupational context where a degree can be used to obtain a job. So, the general question we will try to answer is if the labour market context matters and if the "value" of

the graduates' characteristics changes when taken into account. This discussion can easily be recognized as a declination of the general question underlying all economic sociology, concerning the relevance of the social context in shaping market mechanisms, with the aim of "explaining the functioning of the economic system with non-economics factors" (Regini and Ballarino, 2007, p. 4). In this paper, we attempt to integrate this sociological perspective with that of stratification research, to gain a better understanding of the process of graduate transition into the labour market. This seems an important achievement for this research field, especially in the changing Italian context, where the amount of graduates coming from the humanistic field of study has been rising over recent years.

Review of literature and hypotheses

The existing research

In the first part of the paper we investigate the trade-off which exists between work experience during university, the final graduation mark and the duration of studies. As recent research claimed, the relationship between university and the labour market was usually studied in Italy by only considering the transition to employment after graduation (Triventi and Trivellato, 2008[2]). In our country, with the exception of the work cited, it is necessary to return to the middle of the '80s to find empirical research on the consequences of working during university on educational performance (de Francesco and Trivellato, 1985), but that research was based on a local sample.

Triventi and Trivellato (2008) interrupted this lack of investigation on the topic and, analysing the ILFI database with longitudinal data, concluded that working during university can have two different associations with the risks of dropping out or delaying graduation: their analysis detects a positive reduction of these risks for students who work for a modest part of their time (student-

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[2] These authors also review previous literature about the topic.

workers), while the risks instead increase for "worker-students"[3]. These results suggest that there is a trade-off between work and educational performance only for individuals who study mainly in their free time. Our paper wants to add more information to this topic, not only by extending the analyses to the labour market consequences of previous work experience. Although we use cross-sectional data, we think that we can improve the empirical evidence on this topic in three ways: a) considering occasional work experience during studies (not detected by the ILFI questionnaire); b) analysing the associations with final marks for graduates and, lastly; c) focussing our investigation only on recent cohorts, considering a more homogeneous period[4]. Moreover, and this is the main focus of our paper, we can test the hypothesis about possible differences in the trade-offs among graduates coming from different fields of study. Therefore, in the first part of the paper, we focus on the "academic costs" of working experience during university[5], while in the second part we focus our analyses on labour market outcomes, as previously mentioned. More precisely we want there to investigate the returns to different GQE: final mark, regular timing and work experience. All these three elements could be used by graduates in the labour market to gain a job, adopting them as signals of their training costs (Thurow, 1975). Our aim is than to investigate if the value of these signals differs among fields of study.

There are several previous research papers that estimate the associations between GQE and graduates' outcomes, but they usually consider final mark and delay in graduation but not previous work experience. Furthermore, some of the existing analyses do not consider the graduates who were working before the conclusion of their studies, attempting in this way to focus only on the "real" transition process (see, for example, Bratti and Ballarino, 2006). We prefer, instead, to consider all the population and to estimate the total

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[3] In any case, the strength of the effects is quite low.

[4] The results of Triventi and Trivellato are based on a single sample, which consider all the people enrolled at university from 1938 until 1999, using a control variable in their model. We do the same, for a shorter period of time (graduates from 1995 until 2004).

[5] The disadvantage of our data is that it is collected on graduates and this implies that we cannot investigate the dropping out process.

association of previous work experience on labour market outcomes. There are three main articles exactly focussed on the previous educational performance of graduates on their entry into the labour market. The first is based on the 1992 wave of the IUGS ISTAT survey (the one we do not consider) and it concludes that the final mark produces an effect of low magnitude on the time spent to obtain first employment after graduation (Biggeri et al., 2001)[6]. This analysis also considers previous work experience (with a dummy) and the delay in graduation (with another dummy), concluding that they have an effect on the transition time in the expected direction (positive and negative respectively). At the same time the authors do not detect any significant interaction effect among these variables (and the other covariates in their multilevel model) and the course programme, suggesting that the strength of the effects is constant among fields of study.

The second article investigates the effect of educational performance (final mark and study duration) on the net monthly earnings of graduates, comparing UK and Italy and, for Italy, using the 1998 wave of the IUGS ISTAT dataset (Boero et al., 2001). This research also concludes that previous educational performance in Italy produces only a limited effect on graduates' earnings three years after the completion of the study and underlines that this effect is much more limited in Italy than in the UK.

The third article (Bernardi, 2003) is more recent and is based on the ILFI database; it focusses on the transition to subordinated employment (modelling self-selection into this condition), since it strictly adopts a queuing model (Thurow, 1975). Here the independent variables considered in the model are the final mark and the speed of graduation: both have a positive effect on labour market outcomes (transition time and social prestige of the job) and the relevance of these effects seem to increase over time.

Obviously there are many other analyses on the transition of Italian graduates to the labour market that also comment on the effect of educational performance, but they are not focussed on this topic. However, two

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[6] The authors did not have the upper-secondary school final mark and they cannot control its effects on this variable.

investigations seem relevant to our paper, because they partially overcome the main limit of all the previously reviewed analyses, since they estimate a unique effect for the overall samples. More precisely, all the previous analyses do not consider that different fields of study lead to different labour market contexts, where the entry mechanisms could differ and the GQE could play a different role in the graduates' labour market transition. The first analysis that tries to identify differences in the effects of the GQE is a local study developed by Santoro and Pisati (1996); the second is a brief note on the transition pathways in an article focussed on the effect of fields of study (Ballarino, 2006). Both of these analyses show that graduates coming from different fields of study look for and find a job through different employment search actions; what is more interesting for us is that social networks were more relevant for graduates working as self employed or in the professions field.

Despite these analyses on the pathways to the labour market among different contexts, we still know only a little about the differences of GQE among fields of study, for example we do not even know if the relevance of final marks and of regular study duration is similar among different fields of study. At the same time, it is evident from this brief review that the effect of graduates' previous work experience on labour market outcomes has not been investigated in depth before (Reyneri, 2002).

Before coming to our hypothesis, it is useful to consider once more the last investigation cited in relation to fields of study (Ballarino, 2006). This analysis is particularly useful for us because the author suggested a categorization based on previous research which combines university courses according to the educational resources afforded to their students. He identifies six fields of study for the Italian context: scientific, medicine, law, economics, pedagogy and communication. To reduce the estimation uncertainty we have brought together the second, third and fourth groups and the fifth and the sixth. In this way we come back to the usual distinction between scientific and humanistic courses, but we integrate it with a third group that gives graduates resources that can lead to a profession. Consequently we identify through this aggregation the fields of study for three different labour market contexts. On the one hand, the privileged context for scientific degrees, that gained

advantage in the labour market in the last few decades as a consequence of the lack of this kind of graduate in Italy (Ballarino e Bratti, 2006) and, on the other, the more difficult one connected to humanistic degrees, where there is higher instability and unemployment for graduates; in the middle, there is the third labour market context, where at least part of the graduates obtained a degree which they employ to gain a position in the professional market, a context where we expect that there should be a higher prominence of credentialism (Collins 1979) and, as seen before, of social networks.

Hypothesis

We expect that there should be a trade-off between continuous work experience during university and the delay of graduation and even between continuous work experience and final mark. The idea underlying this assumption is that it should be difficult to gain a good educational performance at university working quite intensively during studies. On the other hand we do not expect this trade-off for occasional jobs, because previous research even found a reduction in the drop-out risk among these students (Trivellato and Triventi, 2008). Considering previous results and the fact that we are analyzing graduates, who are a selected group of students working during university, we should even expect to find a strong and positive relationship; we are cautious to formulate this hypothesis because, as mentioned before, we are not convinced that previous authors (*ibidem*) indicated a convincing measurement of "student-workers". As regards the last possible relationship among GQE, we expect a negative relationship between study duration and final mark and not a trade-off between these indicators of educational performance.

The last hypothesis we formulate for the first part of the paper is that the trade-off between intensive work experience and educational performance should be weaker among graduates coming from less demanding courses, specifically those coming from humanistic studies[7].

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[7] Unfortunately there is a lack of information and we are not able to empirically test the assumption of the less demanding humanistic fields of study. Hereafter, we will also assume that this field is less selective than the scientific field. We have only indirect proof of this assumption: we find less graduates coming from the traditional grammar school ("classical" and "scientific")

We shall now focus on the hypotheses relating to the second part of the paper, those regarding the associations of GQE with labour market outcomes.

For the whole sample, we expect a low positive association between final mark and graduation speed and a higher association of previous intensive work experience with labour market outcomes. We also expect a less strong but positive association also for occasional working students.

Our second general hypothesis on this topic is that the associations of marks and regularity vary across fields of study: to be more precise, our expectation is that their association should be greater where they are more informative and where such information is more necessary in the labour market. Hence, we expect that these characteristics would be more relevant for fields of study where employers have a large number of candidates to choose from or where clients can choose from a larger number of self-employed graduates providing the same service. This is the case of graduates coming from the humanistic field of study, where there is a higher rate of unemployment. We espouse here a sort of "extended" signalling approach (in the Thurow version of the queuing model (1975)), where the educational performance is a way in which graduates can prove their value (ability to learn and hence low cost of additional training) to employers (and, in our opinion, also to their clients if they are self-employed).

At the same time, we also think that university studies in the humanistic field are easier than in the scientific field and that per se the degree could be not informative enough for the employer/client about the value of the graduates' characteristics. Using the Weebleck conceptualization (see van der Veleden and Wolbers, 2009), we assume that in the humanistic field there is less "selectivity" and, moreover, less "specificity": hence graduates could even be less equipped and less qualified to cover a specific job (contrary to the professional field of study).

The general picture is that in the scientific field we should have more selected graduates and a lack of them in the labour market, with consequent

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in the humanistic fields of study (50%), compared to vocational (70%) and scientific schools (50%); at the same time, we know that the more able students are in the traditional grammar schools (see for example the PISA results).

less attention paid to their previous educational performance. In the professional field we should have, at least, more specificity but also a higher level of credentialism and of the social network effect and therefore a higher level of importance of the university certificate per se, also not considering educational performance. In the humanistic field, instead, we would have not only longer queues of graduates competing for the same job, but also credentials gained easily by less selected students, with the consequent higher relevance of educational performance indicators (mark and study duration) in the selection processes.

Focussing now on work experience obtained during studies (occasional and continuous jobs), the assumption we would test is that it helps the graduate to successfully enter the labour market, especially nowadays when competition is greater because of the increasing number of degree-holders (Ballarino and Bratti, 2009; Rostan, 2009), and because of the worsening of Italian labour market opportunities for recent young cohorts (Schizzerotto, 2002; Barbieri and Scherer, 2007; 2009). It is possible to identify many general theoretical approaches that justify this hypothesis, as also pointed out in previous research on a similar topic (Weiss and Klein 2009), but at the same time there is no theory focussed on this issue (Riggert et al., 2006). Following the Human Capital Theory (Becker, 1967), previous work experience can increase individual competency (especially if the job is in keeping with the student's field of study), or, at least, the knowledge of labour market behavioural rules, in a sort of "soft version" of the human capital theory (Weiss, 1995) (unfortunately, we do not have information about the content of students' jobs). A second approach that leads in the same direction is the Social Network Theory (Granovetter, 1974). Working before graduation can help degree-holders to extend their networks in the labour market which can then be used in their search for the first relevant job. A third approach in line with our thesis is the Job Shopping Theory (Johnson, 1978): according to this, previous labour market experience could help graduates to gain more information about the offers available in their economic context, also obtaining a better understanding of their economic value. Two additional related theoretical approaches that suggest a positive effect of previous work experience on labour market

outcomes are, regarding marks and study duration, the Signal and Screening Theories (Spence, 1973; Stiglitz, 1975) (and their extension in the Job competition model of Thurow (1975)): jobs during studies can help graduates to signal their reliability (or their trainability) to employers and can help employers to select the best graduates (but, in this case, only if student jobs relate to the students' field of study).

The last hypothesis we formulate about previous employment experience is that its positive association with labour market outcomes is higher for fields of study where graduates have to compete harder with other candidates, and where they have to make more of an effort to signal their value to the employers/clients, namely in the humanistic field of study.

A brief summary of our hypotheses could then be the following: we expect a positive association between all the GQE (mark, speed and work experience) and labour market outcomes, but of different strengths; in any case, these associations should be greater in the humanistic field of study and smaller in the scientific field, where we also expect a higher trade-off between work experience during university and educational performance.

Data, variables and methods

Data

We analyze the data of a survey conducted every three years by the Italian National Statistical Institute (ISTAT), the "Italian Survey on university graduates' transition to work" (Italian University Graduates Survey, IIUGS, hereafter). This survey collects information on college and work careers of university graduates, who are interviewed three years after their graduation[8]. We used the last four cross-sectional waves of the survey: 1998, 2001, 2004 and 2007 providing information on university graduates who obtained their

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[8] We would also like to have information about the labour market position of graduates one year after graduation. We expect that the effect of the educational performance could be greater in the initial phase of entry into the labour market Unfortunately, this information is available only for the last wave of the survey.

degrees in 1995, 1998, 2001, and 2004[9] respectively. The minimum sample size of a wave is 13,000 cases for the first wave and a maximum of 26,000 cases for the last. A detailed description of the sampling procedure can be found in the ISTAT manuals[10]. Table 1 summarizes survey years, corresponding years of graduation and total sample sizes.

Table 1. Survey wave characteristics: interview year, graduation year and total sample sizes

Survey year	Graduation year	IUGS sample size
1998	1995	17.326
2001	1998	20.844
2004	2001	26.006
2007	2004	26.570[a]

[a] New bachelor graduates are excluded.

We have brought together the four waves to obtain a larger sample and, in this way, less uncertain estimates; each wave is weighted with the sample weight provided by ISTAT and with a second weight which we build in with the aim of weighting every survey proportionally to the graduate population of the year considered.

Variables
    Dependent variables
We consider three dimensions for the measurement of labour market outcomes three years after graduation: unemployment, employment stability and overeducation. As regards the first and second dimensions, we use a typology where we classify respondents into four categories: inactive/students, unemployed, employed in unstable jobs and employed in stable jobs. The construction of this variable follows a hierarchical approach; we start from the last position, identifying as stable workers employed workers with a permanent

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[9] We did not use the first wave of this survey, produced in 1995, because it was not possible to use all the control variables of our models for that year.
[10] A detailed description of the IUGS data can be find in Bratti and Ballarino (2009).

contract and traditional self-employed persons (entrepreneurs, professionals, etc). We then consider as unstable jobs all the respondents working with temporary contracts, attending a "stage" (a kind of vocational apprenticeship, compulsory for some professions, e.g. lawyers and business consultants), working on the basis of new forms of self-employment that usually conceal employed labour (continuative and coordinated cooperation, project contracts) and also people working without contracts. We consider as unemployed the respondents who stated that they were not working at the time of the interview, that they were looking for a job and had taken action to find a job at least once in the month before the interview. The remaining part of the sample is considered inactive: two thirds or more of these cases are in each student wave, while among the residual cases we find a strong presence of women over 30, living in the South of Italy, a profile associated with motherhood and childcare.

As for overeducation, we present a variable here where the employed are divided between overeducated and not, viewing their statement about their present job and the need to have a degree to do it. If the respondents state that it is not necessary to have a degree in order to do their present job, they are considered as overeducated, as per Bratti and Ballarino (2006)[11]. Unfortunately, this question was not asked to respondents attending a "stage". We treat the latter as people having a qualified work position. The reason is that approximately 80% of these cases (in each wave) are constituted by law or economics graduates, typically young people apprenticed to lawyers or accountants[12].

Independent variables

In this paper we analyse the associations of three graduate qualifying elements: final mark, delay in graduation and work experience during

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[11] For reasons of space, we ignore here the debate about the many different possible measures of overeducation/overqualification (Chevalier 2003).

[12] The usual characteristic of the relationship between the trainee and his/her employer is that the trainee is not paid (there is merely a reimbursement of expenses for food and transport) but he/she can learn the job; hence it would appear to be really difficult to consider a "stage" as an overqualified situation.

university studies. We mainly consider them as elements that graduates could use to signal their value and their low training costs to employers (Thurow, 1975).

The first variable is used in two different versions: in the first version, applied to the models in the first part of the paper where we investigate the trade-off between work experience and educational performance, we use a pseudo-continuous version of this variable. Here the final mark varies from a minimum value of 77 points and a maximum value of 113 points for students who gain the maximum mark and the "lode"[13], considered as 3 additional points. For the lower values, under 100 points, ISTAT does not give the exact mark but three ranges: 70-79, considered as 77; 80-89 as 87: 90-94 as 92 and 95-99 as 97. The mean values for each category were calculated on the basis of the first wave, where full information about the final mark was available. The rate of graduates obtaining a final mark under 100 points is about 28% of the whole sample.

The second version of the final mark is a categorical variable that we use in the second part of the paper, to test the hypothesis about the different strength of the final mark's associations with labour market outcomes among different fields of study. Here we build a categorical variable that divides the graduates within each field of study into three groups: 36% of cases with the lowest marks, 23% with a mark around the medium and 41% of cases with the highest marks[14]. We decide to use this version of the final mark for three reasons: the marks distribution differs across fields of study and we need a ranking on individuals within each field; there is less uncertainty using larger categories and, finally, the estimation results are easier to read. In any case, also using the pseudo-continuous final mark (or a standardized version of it) we achieved the same results as the models comparing their associations among fields of study.

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[13] For a small group of graduates in the first wave the maximum possible mark was 100 instead of 110. Following the ISTAT data treatment applied in the following waves, we standardize all marks to the maximum value of 110 points.

[14] The cut-off points were decided comparing the different distribution of final marks among the three fields of study, trying to obtain maximum homogeneity in the ranking across them.

Even for the delay in graduation we use two different versions of the variable. In the first part of the paper when we investigate the trade-offs among GQE we use the information as it is available in the data, as a pseudo-continuous variable that varies from 0 years of delay to 5 years (5 is the mean value chosen for the category "4 or more years"). In the second part of the paper we use a dummy and we consider the delay as "serious" only if it is greater than two years (it is quite usual for students to delay graduation by one year to complete their thesis (see for example Triventi and Trivellato, 2008). In this way we obtain about 40% of cases considered as graduations with a serious delay[15].

The last independent variable is about work experience. Here we use the data as it was collected by ISTAT, despite not being completely satisfied with the questionnaire on this point. There are three groups: graduates who state that they did not work at all during university, those who state that they worked occasionally and those who state that they worked in a continuous manner. We think that occasional workers is too broad a definition to be able to capture the differences between very short but intensive periods of work (i.e. seasonal jobs), regular weekend workers or those who only sometimes worked during university (the real occasional workers). Moreover, there is a lack of information about the coherence of this work experience with the graduate's field of study, the truly relevant (but missing) data.

Control and context variables

Fortunately, we have quite a large set of control variables to include in our models; following previous authors working on the same topic, they could be considered enough to control the self-selection into different fields of study (Ballarino and Bratti, 2006); at the same time, the previous analysis on the consequences of work experience during university on graduation, controlled the selection in this condition with less variables than the ones we consider (Triventi and Trivellato 2008).

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[15] For this variable it was not necessary to build a homogeneous variable among fields of study, because the initial distributions are quite similar. The rate of serious delay are, respectively, 39%, 44% e 37%.

For the dummy control we use variables for gender, age[16], respondents' upper-secondary education[17]; parental education[18]; family social class[19] and geographical area of residence (North West, North East, Centre, South, Islands). We also use a control continuous variable, the final mark at the end of the upper secondary school (range from 36 to 60 points). It's important to use all these control variables to reduce the risk of self selection into working experience during university; we are obviously not able to exclude this phenomenon, but the variables about previous school experience (type) and results (final mark) should capture to some extent ability and motivation.

Finally, there is the variable defining the occupational contexts that we will compare in our next analysis. It was not possible to use the usual ISTAT fields of study, because of the uncertainty of the estimates. We then decided to apply a reduction of that disaggregation based on Ballarino's proposal (2006) but it was still too disaggregated for our sample. As previously mentioned, we arrived at the definition of three fields of study, through the aggregation of the original categories: the scientific (scientific courses), professional (medicine, law, economics, architecture[20]) and humanistic (pedagogy and communication).

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[16] Dividing the sample between respondents aged under 30 or over, to control our associations for the situation of adults coming back to the university after a long work experience.

[17] Dividing the Grammar School into three different categories because in the university graduate sample the majority of respondents come from Grammar School - Classical, Scientific, Others - and comparing them with Technical and Vocational schools.

[18] We consider the highest educational level between father and mother and we create a variable with four categories: primary education, lower secondary – also including "avviamento professionale", upper-secondary - also including "qualifica biennale", a two-year qualification, - and tertiary - also including "diploma universitario", Phd and Master's degrees.

[19] Here too we follow the dominance approach, using a reduced version of the Cobalti and Schizzerotto social class schema (1994), with five categories: employed service class, self-employed service class - professionals and entrepreneurs, white-collar workers, petit bourgeoisie, manual workers.

[20] We decided to move graduates in architecture here; they were considered as scientific in the original version of the fields of study categorization. At the same time, we observe that in our proposal there are two courses which can lead to a profession but they are not in the professional field of study, because we think they are better classified in the other fields: engineering (that

In any case, to avoid the risk of bringing together courses which are too different into the same field of study, in the general models where we consider the whole sample we use a ten-category version of the field of study variable; when we compare the associations among the three macro-fields of study, we also use the ten categories of the previous uncollapsed variable as control dummies in the models.

Methods

The analysis consists of two parts. In the first part we estimate the associations of work experience during university with the final graduation mark and timing. We use linear and multinomial logistic regressions to evaluate these associations and, to compare the latter among the fields of study, we use the Average Partial Effects approach[21] (Bartus, 2005; 2008; Mood, 2009). In the second part of the analysis we estimate the associations of final mark, timing and previous work experience with labour market outcomes (unemployment, instability and overeducation) and here too we compare the associations among fields of study by adopting the Average Partial Effects approach. Analyzing instability and overeducation, we use multinomial logistic models.

Research results

Basic descriptive analysis

As we discussed in the introduction of this paper, the rate of graduates who experienced at least occasional periods of work is high (the majority of cases) and increasing in time (table 2). We detect a larger amount of both occasional and continuous workers in the last cohort. At the same time, we observed that

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remains in the scientific field of study) and psychology (in the humanities). We also underline that results do not change excluding Medicine graduates from the analyses, probably because they are few; in fact, the majority of them is still attending specialization courses three years after graduation.

[21] See also Triventi's article in this number.

the number of graduates who, three years after graduation, have the same job that they did during university studies is quite stable over the years (around 10% of the sample).

Moreover, the amount of work experience during university is very different among the three fields of study that we compare in our analysis (table 3). The big difference here is between the humanistic field of study compared to all the others and it is mainly in the amount of continuous work, cases classified as "working students" in the Triventi and Trivellato's definition (2008).

Table 2. Graduates' work experience by cohort of graduation (row %)

Cohort of graduation	Never worked	Occasional work	Continuous work	Total	Number of cases
1995	42,7	45,0	12,3	100,0	17.106
1998	41,5	45,3	13,2	100,0	20.576
2001	33,3	51,0	15,7	100,0	22.153
2004	32,1	51,0	16,9	100,0	26.559
Total	36,6	48,6	14,8	100,0	86.394

Table 3. Graduates' working experiences by field of study (row %)

Field of graduation	Never worked	Occasional work	Continuous work	Total	Number of cases
Scientific	43,2	47,8	9,0	100,0	25.490
Professional	40,9	46,2	12,9	100,0	37.875
Humanistic	25,7	52,4	21,9	100,0	22.508
Total	36,6	48,6	14,8	100,0	85.873

Table 4. Graduates' labor market outcomes by field of study (row %)

Field of graduation	Inactive	Unemployed	Unstable work	Stable work	Total	Number of cases
Scientific	14,6	3,4	21,7	60,3	100,0	25.413
Professional	21,0	6,0	24,4	48,6	100,0	37.663
Humanistic	15,1	7,7	34,9	42,3	100,0	22.273
Total	17,6	6,0	27,1	49,3	100,0	85.349

Finally, we also observe some big differences among fields of study looking at the graduate labour market situation three years after their degree and in the direction that we expected (table 4).

We can see that the amount of inactivity is higher in the professional field, where there are more post-tertiary students engaged in training courses leading to professions. At the same time, we can also note that the rate of unemployed and unstable workers is higher in the humanistic field and much lower in the scientific field. Moreover, if we consider the overqualified rate, we can observe a bigger difference: 15% of graduates in the scientific field are in this position, 19% in the professional and as many as 33% in the humanistic field.

Trade-offs among GQE

We shall now start our analysis focusing on the trade-off between work experience during university and the final mark and between the study duration and the final mark. In the following figure, we report the beta coefficient and their confidence interval (at 95%) of three models of linear regression[22], one for each field of study. The dependent variable is the final mark, the independent variables are two dummies for work experience (one for occasional jobs and one for continuous employment, the reference category is graduates who did not work during university) and the years of delayed graduation (the pseudo-continuous variable)[23]; the control variables in the models are all those listed above.

As expected, there is a negative relationship between graduation delay and final mark: every year of delay reduces the graduate's mark by half a point. Moreover, this trade-off is greater in the scientific and professional fields of study, in line with our hypothesis.

Looking at the effects of work experience, we observe that there is no trade-off between occasional jobs and the final mark and, in keeping with Triventi and Trivellato (2008), there is a positive effect in the humanistic field of study.

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[22] We used a robust estimation.

[23] We decided to consider work experience and delay in the same model because it could be argued that working students may decide to delay their graduation to obtain a better final mark. In any case, models considering the two variables one by one also lead to the same conclusions.

Instead, we find the expected trade-off between continuous work experience and the final mark in the scientific and professional field, while it even disappears in the humanistic field.

Figure 1. Associations between final mark and graduation delay/work experience during university by field of study: average partial effects and 95% confidence intervals.

Legend: F1=Scientific field; F2=Professional field; F3=Humanistic field
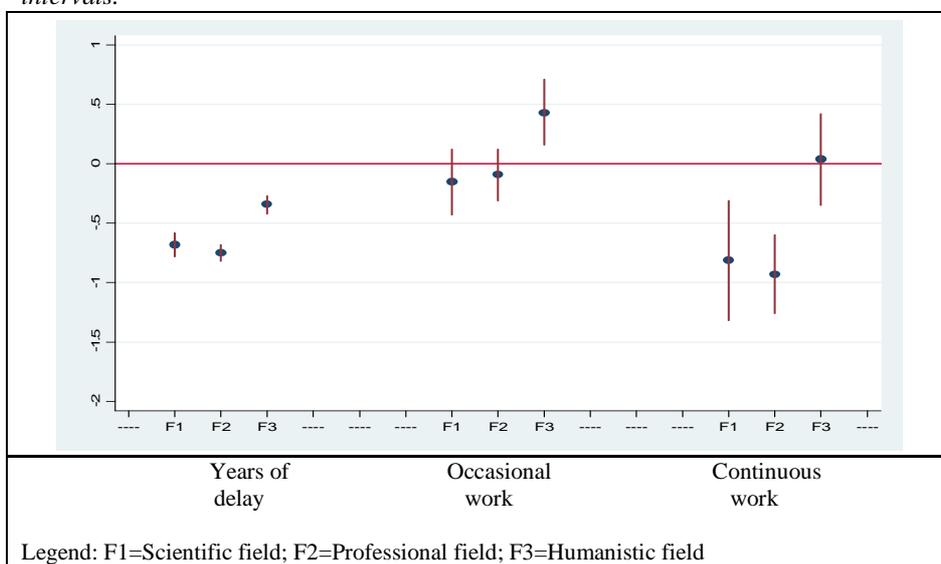
Figure 2 shows the associations between graduation delay (number of extra years spent to obtain a degree) and the work experience/the final mark[24], following the same statistical approach used previously.

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[24] Here too, we decided to consider both variables in the same model because it could be argued that working students may decide to accept lower marks to graduate earlier. Also in this case models considering the two variables one by one lead to the same conclusions.

Here we obtain different results in the trade-off analysis: both occasional and continuous jobs lead to a short delay in graduation (about 0.20 years, only three months); the association seems a little lower for the humanities, but the difference is not significant taking the estimation uncertainty into account. Here too, as expected, we find the positive relationship between speed and final mark. Considering that here the dependent variable is a really raw continuous measure we also estimated binomial logistic models where the dependent variable is the risk of graduating three or more years after the regular deadline. We obtained results similar to those shown in figure 2.

Figure 2. Associations between years of delay and work experience during university/ final mark by field of study: average partial effects and 95% confidence intervals.

Legend: F1=Scientific field; F2=Professional field; F3=Humanistic field
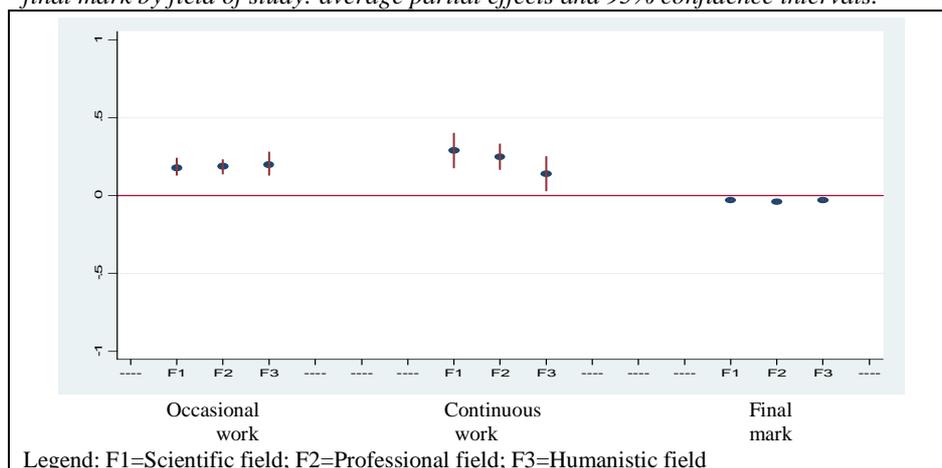
We may then conclude that among graduates too we can see some evidence of the trade-off between work experiences on the one hand and educational performance on the other, but all the associations are limited in magnitude. Moreover, in line with our hypothesis, the trade-offs of a limited magnitude

almost disappear when we consider the less demanding course of the humanistic field of study.

Associations of GQE with labour market outcomes

We shall proceed to analyze the associations of GQE with the labour market position of graduates three years after the end of their university studies: unemployment, occupational instability, overeducation[25]. In figure 4, we estimate the average partial effect of GQE on the overall sample, using multinomial logistic regressions which consider all the control variables listed above.

If we observe figure 3a, we can see that all the associations are in line with our expectations: previous work experience reduces the risk of being unemployed, to a larger extent if continuous jobs are involved; high marks do the same with a lower magnitude and the delay increases the risk of unemployment. We can also observe that the only significant association is that relating to continuous job experience, which reduces the unemployment risk by more than 4 percentage points (the overall sample rate of unemployment is around 6%).

Looking now at the second graph (fig. 3b), we can find only one relevant association: previous job experience reduces the risk of being in an unstable employment position three years after graduation, while the educational performance does not matter.

Lastly, looking at the associations with overeducation (fig. 3c), we find the opposite situation: here the only marked association is that relating to the final mark: better students show a lower risk of obtaining a job not in keeping with their studies. We can also observe a limited association as a result of the delay in graduation and a small increase in the risk due to previous work.

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[25] We do not consider inactivity in our labour market outcomes because this category collapses individuals in very different situations: unemployed discouraged that do not actively look for a job, students attending post graduation courses, females that had a baby after graduation, etc. Therefore, it is difficult to clearly interpret the belonging to this category.

Figure 3. Associations between negative labour market outcomes and GQE: average partial effects and % confidence intervals
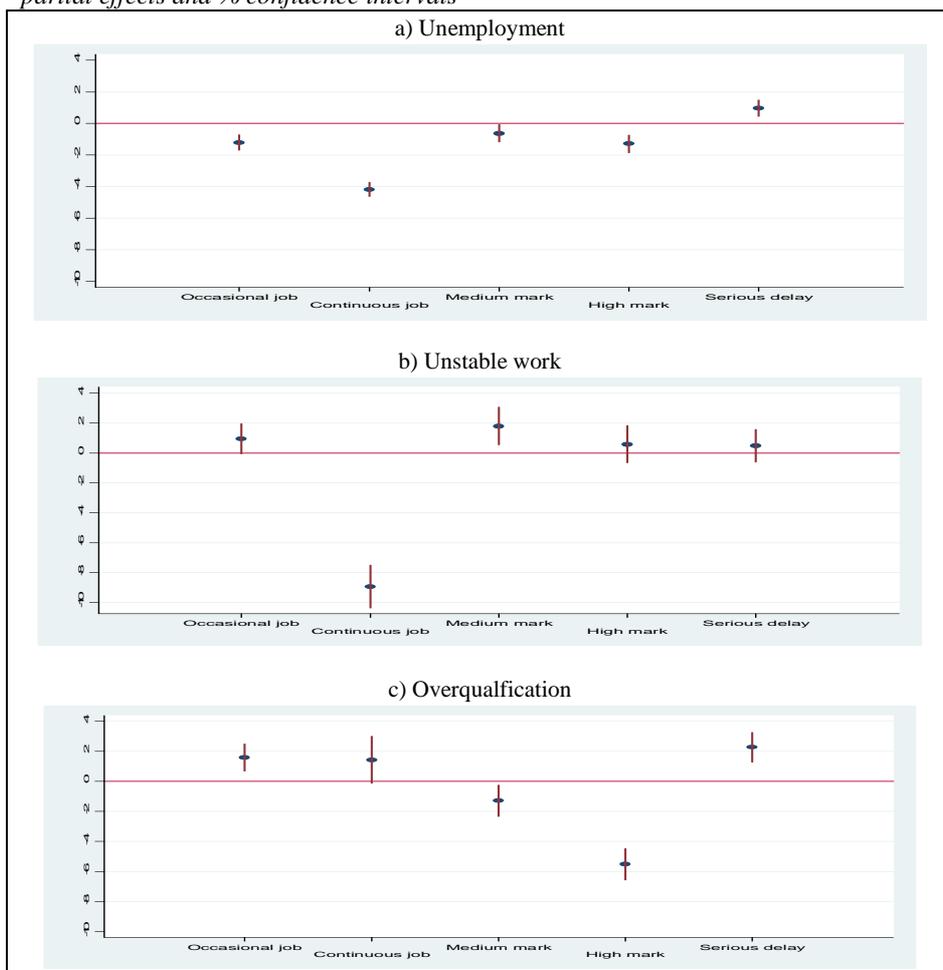
We can now check whether these associations vary among the fields of study and if the differences observed are in the direction expected by our hypotheses.

In figure 4, we analyze the associations of GQE with the unemployment risk comparing the average partial effects of three multinomial logistic regressions estimated on graduates in the scientific, professional and the humanistic fields of study respectively.

We detect a marked difference in the magnitude of protection from unemployment due to previous continuous job experience: it is greater for the humanities graduates, as expected, and they also gain from occasional work experience, while this is not the case for the other graduates. Considering educational performance, we observe that the associations are again more marked for the humanities degree-holders, but that the uncertainty of the estimate is too high to sustain that these differences are significant.

Looking now at protection from unstable job positions (fig. 5), we again detect a stronger association for continuous work experience for the humanities graduates, but not for occasional jobs. Hence these seem to be a better way of obtaining a job for the degree-holders in that field of study, probably through networks developed in the labour market, but not a way of getting faster stable jobs. Here too, uncertainty regarding the associations of educational performance is too high to obtain a significant difference, but it would seem that the associations are once more higher for the humanistic field, but contrary to our expectations pertaining to final marks. In any case, the associations even when significantly different from zero are limited.

In the last figure, we can finally observe the associations with the risk of being overqualified (fig. 6). As for the educational performance indicators, we can see that there are no significant differences between fields of study, although protection due to higher final marks seems greater in the humanistic field, while penalization as a result of delay seems greater in the scientific field. Both these differences are too small and too uncertain to be considered significant.

Figure 4. Associations between the risk of being unemployed three years after graduation and work experience during university, final mark and graduation delay by field of study: average partial effects and 95% confidence intervals.

Legend: F1=Scientific field; F2=Professional field; F3=Humanistic field
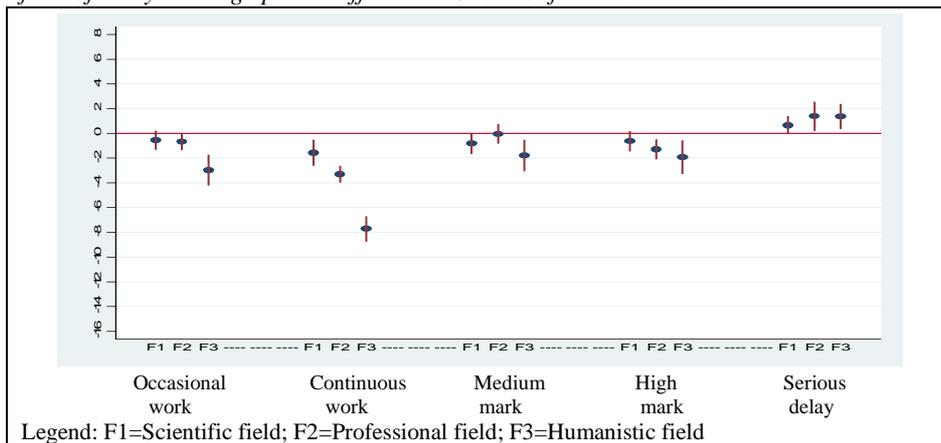
Figure 5. Associations between the risk of having an unstable job three years after graduation and the work experience during university, final mark and graduation delay by field of study: average partial effects and 95% confidence intervals.

Legend: F1=Scientific field; F2=Professional field; F3=Humanistic field
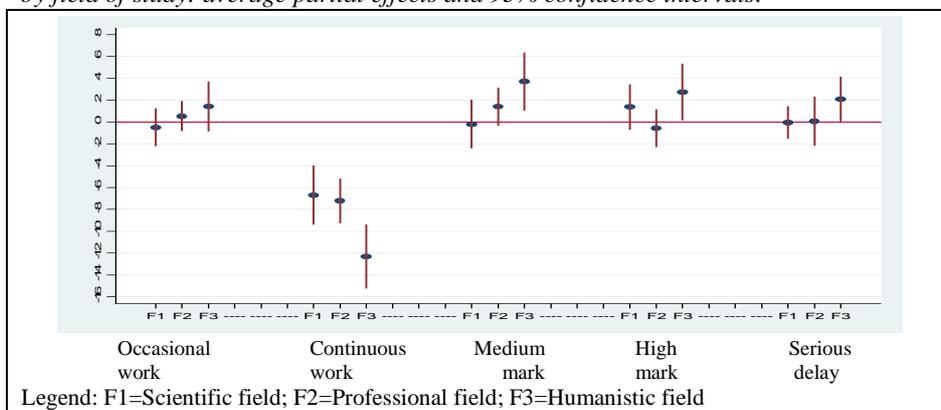
As regards previous work experience, we can observe that the association is almost zero for the scientific and professional fields of study, while there is an increase of 4% in the risk of being overqualified and it is significantly different from zero for the humanities degree-holders. Here too the level of uncertainty is high and the confidence intervals overlap, but data suggest that in the humanistic field of study previous work experience may not be a factor of protection from overeducation, but, on the contrary, a risk factor. We will return to this point in the conclusions of the paper.

Figure 6. Associations between the risk of being overqualified three years after graduation and work experience during university, the final mark and graduation delay by field of study : average partial effects and 95% confidence intervals.

Legend: F1=Scientific field; F2=Professional field; F3=Humanistic field
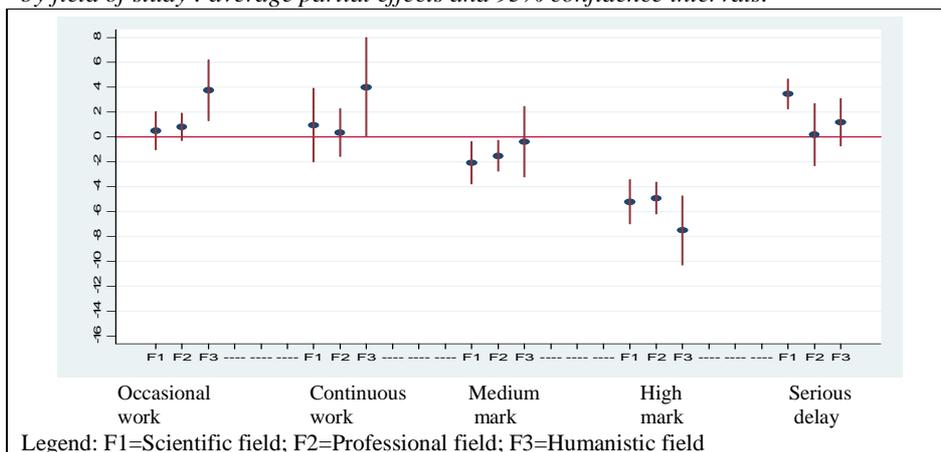
Conclusions

As expected, our analyses showed that the GQE matters in defining graduate labour market outcomes and, specifically, in avoiding the risk of being unemployed, having an unstable job or being overqualified. What we did

not expect, but we detected with our analysis, is that especially the final mark and previous work experience play different roles, according to the single labour market outcome considered. Previous work experience, if continuous, is a significant factor for preventing the risk of being unemployed or unstable, but does not matter in relation to the risk of being overqualified. Conversely, the final mark heavily reduces the risk of being overqualified, but does not matter much when considering the unemployment and instability risk. Hence, GQE show different associations with different labour market outcomes: previous work experience helps graduates to enter the labour market in a stable manner and being a good student reduces the risk of getting a "bad job" not in line with previous university studies. This conclusion is significant, because previous analyses usually consider only one outcome and tend to ignore that their conclusions are closely related to the labour aspect considered.

On the other hand, our analyses also demonstrate that, when we consider the selected sample of graduates, the trade-off between work experience and educational performance exists, but it is very low. We think that Triventi and Trivellato (2008) are right when they sustain that there is a sort of "motivational effect", which can lead "working students" and "studying workers" to overcome the trade-off between study and work. Despite this, there is evidence of trade offs among GQE and so we should consider that students must, to some extent, choose with which GQE signal their training costs to employers. Following signaling theory (Spence 1973), signals differ for their cost among fields of study.

In the second part of this paper, we also showed that returns to different GQE are not the same and, moreover, that the relationships among GQE and labour market outcomes vary across fields of study. Therefore signals differ also looking at their occupational returns. More precisely what differs is the relevance of continuous labour market experience. Occasional jobs, final mark and delay have more or less the same association with labour market outcomes in all the fields of study we considered. Instead previous continuous work experience has a significantly marked association with the protection from the risk of unemployment and instability, especially in the Humanities. We should also keep in mind that continuous jobs also seem to increase the risk of being

overqualified (although the association here is undoubtedly no different from that in the other fields of study). One explanation for these mixed results is that, in the humanistic field, previous work is too precious to be abandoned in a context of high unemployment and instability and so it becomes a sort of "trap" for graduates; they keep the job they had before graduation, renouncing new jobs more in line with their studies. This is confirmed by the rate of working graduates in the various different fields of study, who – three years after graduation - are doing the same job they had before obtaining their degree: 7% in the scientific, 14% in the professional and 23% in the humanistic fields. In our opinion this means that, especially in the humanistic field, there is a different sequence in the transition to the labour market, with a strategy consisting of an anticipation of this process before students end their studies. Long-term trend analyses showed an increase in this kind of anticipation in the Italian context (Pisati, 2002). What our analyses show is that pros and cons are involved in this kind of transition: starting work during studies in humanistic courses reduces the risk of being out of the central and stable labour market, but could[26] also lead more frequently to the renouncement of a "real graduate's job".

   This conclusion seems relevant to the Italian context, where we have detected, in the last decade, an increase in the rate of graduates coming from humanistic fields of study and also an increase in unstable job positions. It seems to us that the divide between scientific graduates and humanistic graduates in the mix of studying and working during university and in the following transition process is becoming a new relevant point for future research.

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[26] We are cautious with this part of our conclusion because of the overlapping among confidence intervals in our analyses.

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Appendix

Table A1. Results from linear regression models predicting the graduation final mark by fields of study (beta and robust standard errors)

	Scientific		Professional		Humanistic	
	Beta	Robust SE	Beta	Robust SE	Beta	Robust SE
Years of graduation delay	-0,68	0,05	-0,75	0,04	-0,34	0,04
Work experienc: none	*ref.*		*ref.*		*ref.*	
Work experienc: occasional jobs	-0,15	0,14	-0,09	0,11	0,43	0,14
Work experienc: continuous jobs	-0,81	0,26	-0,93	0,17	0,04	0,20
Upper secondary final mark	0,39	0,01	0,39	0,01	0,30	0,01
Upper secondary: classical grammar school	*ref.*		*ref.*		*ref.*	
Upper secondary: scientific grammar school	-0,02	0,23	-0,67	0,14	-0,66	0,17
Upper secondary: other grammar school	-1,54	0,41	-2,28	0,21	-2,24	0,17
Upper secondary: technical institute	-1,25	0,26	-2,42	0,16	-2,63	0,20
Upper secondary: vocational institute	-3,35	0,52	-3,97	0,33	-3,61	0,32
Gender: female	*ref.*		*ref.*		*ref.*	
Gender: male	-0,13	0,16	-0,95	0,10	-0,61	0,16
Age: under 30 years	*ref.*		*ref.*		*ref.*	
Age: 30 years old or more	-1,43	0,21	-0,42	0,15	-0,52	0,18
Residence zone: North-West	*ref.*		*ref.*		*ref.*	
Residence zone: Islands	4,74	0,27	1,86	0,17	0,92	0,24
Residence zone: South	3,02	0,21	1,36	0,15	0,79	0,17
Residence zone: Center	4,35	0,17	2,84	0,13	1,98	0,15
Residence zone: North-East	1,27	0,19	-0,27	0,15	0,60	0,16
Parents education: primary	*ref.*		*ref.*		*ref.*	
Parents education: tertiary	-0,15	0,28	0,20	0,20	-0,37	0,25
Parents education: upper secondary	0,00	0,24	-0,23	0,18	-0,33	0,22
Parents education: lower secondary	0,05	0,24	-0,05	0,17	-0,13	0,21
Parents social class: manual workers	*ref.*		*ref.*		*ref.*	
Parents social class: service class employees	-0,20	0,28	0,05	0,21	-0,22	0,25
Parents social class: service class self-employed	-1,33	0,31	-0,29	0,20	-0,35	0,24
Parents social class: white-collar	0,01	0,23	0,10	0,18	-0,02	0,20
Parents social class: self employed	-0,36	0,25	0,18	0,19	-0,49	0,23
Cohort: 1995	0,46	0,20	*ref.*		0,00	0,14
Cohort: 1998	0,41	0,18	-0,77	0,13	*ref.*	
Cohort: 2001	*ref.*		-1,61	0,14	-0,68	0,14
Cohort: 2004	-0,09	0,19	-2,35	0,14	-1,40	0,16

Table A1.(continued)

Field of study: Scientific	*ref.*		-		-	
Field of study: Medicine	-		*ref.*		-	
Field of study: Economics	-		-4,00	0,13	-	
Field of study: Law	-		-5,91	0,13	-	
Field of study: Pedagogy	-		-		5,27	0,17
Field of study: Communication	-		-		*ref.*	
Field of study: Biology/Chemistry	1,44	0,21	-		-	
Field of study: Literature/Languages	-		-		4,47	0,14
Field of study: Engineering	-2,26	0,21	-		-	
Field of study: Architecture	-		1,26	0,15	-	
Constant	84,40	0,70	90,40	0,47	90,93	0,50
Number of cases	14.315		30.691		15.750	
R2	0,29		0,36		0,31	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).

Table A2. Results from linear regression models predicting the years of graduation delay by fields of study (beta and robust standard errors)

	Scientific		Professional		Humanistic	
	Beta	Robust SE	Beta	Robust SE	Beta	Robust SE
Work experienc: none	*ref.*		*ref.*		*ref.*	
Work experienc: occasional jobs	0,18	0,03	0,19	0,02	0,20	0,04
Work experienc: continuous jobs	0,29	0,06	0,25	0,04	0,14	0,05
Graduation final mark	-0,03	0,00	-0,04	0,00	-0,03	0,00
Upper secondary final mark	-0,02	0,00	-0,02	0,00	-0,02	0,00
Upper secondary: classical grammar school	*ref.*		*ref.*		*ref.*	
Upper secondary: scientific grammar school	-0,09	0,05	-0,02	0,03	0,01	0,05
Upper secondary: other grammar school	0,08	0,09	0,21	0,05	0,18	0,05
Upper secondary: technical institute	-0,05	0,05	0,06	0,04	0,06	0,06
Upper secondary: vocational institute	-0,30	0,11	-0,12	0,08	0,23	0,10
Gender: female	*ref.*		*ref.*		*ref.*	
Gender: male	0,24	0,03	0,00	0,02	0,08	0,04
Age: under 30 years	*ref.*		*ref.*		*ref.*	
Age: 30 years old or more	2,03	0,04	1,90	0,03	1,36	0,05
Residence zone: North-West	*ref.*		*ref.*		*ref.*	
Residence zone: Islands	0,66	0,06	0,78	0,04	0,55	0,06
Residence zone: South	0,56	0,04	0,66	0,03	0,16	0,05
Residence zone: Center	0,60	0,04	0,61	0,03	0,26	0,05
Residence zone: North-East	0,18	0,04	0,19	0,03	0,08	0,05
Parents education: primary	*ref.*		*ref.*		*ref.*	
Parents education: tertiary	-0,04	0,07	-0,28	0,04	-0,26	0,07
Parents education: upper secondary	-0,06	0,06	-0,18	0,04	-0,15	0,06
Parents education: lower secondary	-0,01	0,06	-0,03	0,04	-0,12	0,06
Parents social class: manual workers	*ref.*		*ref.*		*ref.*	
Parents social class: dependent service class	-0,03	0,06	0,00	0,05	0,00	0,07
Parents social class: autonomous service class	-0,06	0,07	-0,06	0,04	-0,04	0,07
Parents social class: white collars	0,05	0,05	0,07	0,04	0,05	0,06
Parents social class: self employed	0,00	0,05	0,06	0,04	0,11	0,06
Cohort: 1995	0,22	0,04	*ref.*		0,19	0,04
Cohort: 1998	-0,19	0,04	-0,36	0,03	-	
Cohort: 2001	-		-0,17	0,03	-0,14	0,04
Cohort: 2004	-0,47	0,04	-0,75	0,03	-0,68	0,04
Field of study: Scientific	*ref.*		-		-	
Field of study: Medicine	-		*ref.*		-	
Field of study: Economics	-		0,79	0,03	-	
Field of study: Law	-		0,87	0,03	-	

Table A2.(continued)

Field of study: Pedagogy	-		-		-0,22	0,05
Field of study: Communication	-		-		*ref.*	
Field of study: Biology/Chemistry	-0,37	0,04	-		-	
Field of study: Literature/Languages	-		-		0,67	0,04
Field of study: Engineering	-0,12	0,04	-		-	
Field of study: Architecture	-		1,07	0,04	-	
Constant	5,78	0,24	6,10	0,19	5,61	0,30
Number of case	14.315		30.691		15.750	
R2	0,42		0,40		0,26	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).

Table A3. Results from multinomial logistic regression models predicting unemployment, unstable job position and overqualified position on the overall sample (% average partial effects and standard errors)

	Unemployment		Unstable job		Overqualified	
	APE	SE	APE	SE	APE	SE
Work experience: none	*ref.*		*ref.*		*Ref.*	
Work experience: occasional jobs	-1.21	0.25	0.95	0.51	1.59	0.45
Work experience: continuous jobs	-4.18	0.22	-8.93	0.72	1.43	0.80
Graduation final mark: lower	*ref.*		*ref.*		*Ref.*	
Graduation final mark: medium	-0.62	0.28	1.79	0.65	-1.28	0.53
Graduation final mark: higher	-1.28	0.28	0.58	0.63	-5.51	0.53
Graduation delay: 2 or less years	*ref*					
Graduation delay: 3 or more years	0.96	0.26	0.48	0.55	2.27	0.50
Upper secondary final mark	-0.05	0.02	-0.11	0.04	-0.05	0.03
Upper secondary: classical grammar school	*ref.*		*ref.*		*Ref.*	
Upper secondary: scientific grammar school	-0.05	0.31	-2.66	0.67	2.37	0.68
Upper secondary: other grammar school	0.00	0.38	-2.31	0.85	5.85	0.93
Upper secondary: technical institute	0.54	0.37	-2.64	0.75	5.35	0.77
Upper secondary: vocational institute	0.43	0.74	-2.72	1..38	3..90	1.50
Gender: female	*ref.*		*ref.*		*Ref.*	
Gender: male	-1.30	0.25	-3.72	0.53	1.05	0.49
Age: under 30 years	*ref.*		*ref.*		*Ref.*	
Age: 30 years old or more	0.14	0.31	-5.05	0.64	-0.13	0.61
Residence zone: North-West	*ref.*		*ref.*		*Ref.*	
Residence zone: Islands	7.93	0.85	0.73	0.91	-6.75	0.69
Residence zone: South	8.14	0.65	-0.85	0.69	-7.56	0.54
Residence zone: Centre	3.50	0.54	2.18	0.69	-0.50	0.58
Residence zone: North-East	0.77	0.46	1.70	0.69	2.98	0.60
Parents education: primary	*ref.*		*ref.*		*Ref.*	
Parents education: tertiary	0.81	0.48	-3.10	0.94	-2.74	0.83
Parents education: upper secondary	0.82	0.40	-1..71	0.84	-1.37	0.73
Parents education: lower secondary	0.22	0.38	0.04	0.82	0.24	0.71
Parents social class: manual workers	*ref.*		*ref.*		*Ref.*	
Parents social class: dependent service class	-1.11	0.42	-0.15	0,.98	0.64	0.90
Parents social class: autonomous service class	-1.48	0.39	-3.00	0.93	0.84	0.87
Parents social class: white collars	-0.46	0.38	-0.38	0.82	0.94	0.74
Parents social class: self employed	-0.05	0.40	-1.28	0.86	-0.79	0.76
Cohort: 1998	*ref.*		*ref.*		*Ref.*	
Cohort: 1995	2.32	0.35	-3.59	0.59	-0.91	0.54
Cohort: 2001	0.75	0.34	1.61	0.64	-0.76	0.61
Cohort: 2004	1.03	0.32	2.77	0.61	-0.89	0.59

Table A3. (continued)

Field of study: Scientific	ref.		ref.		Ref.	
Field of study: Medicine	-4..13	0.36	-4.01	1.36	-21.47	0.34
Field of study: Economics	-0.26	0.64	4.04	1.29	4.50	1.08
Field of study: Law	4.64	0.99	-2.21	1.21	-6.67	0.92
Field of study: Pedagogy	0.74	0.95	8.47	1.82	7.03	1.64
Field of study: Communication	3.12	0.99	6.19	1.44	9.16	1.30
Field of study: Biology/Chemistry	0.09	0.72	-0.33	1.26	-10.38	0.79
Field of study: Literature/Languages	4.3	1.03	8.94	1.50	8.92	1.30
Field of study: Engineering	-1.97	0.56	-5.46	1.17	-5.87	0.94
Field of study: Architecture	0.12	0.76	-2.52	1.32	-4.97	1.02
Number of cases	60,421				54,010	
Pseudo R2	0.12				0.12	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).

Table A4. Results from multinomial logistic regression models predicting unemployment by field of study (% average partial effects and standard errors)

Unemployment	Scientific		Professional		Humanistic	
	APE	SE	APE	SE	APE	SE
Work experience: none	*ref.*		*Ref.*		*Ref.*	
Work experience: occasional jobs	-0.55	0.38	-0.67	0.33	-2.97	0.62
Work experience: continuous jobs	-1.57	0.52	-3.30	0.33	-7.72	0.51
Graduation final mark: lower	*ref.*		*Ref.*		*Ref.*	
Graduation final mark: medium	-0.82	0.41	-0.04	0.39	-1.78	0.63
Graduation final mark: higher	-0.62	0.40	-1.29	0.39	-1.92	0.67
Graduation delay: 2 or less years	*ref.*		*Ref.*		*Ref.*	
Graduation delay: 3 or more years	1.37	0.49	0.67	0.35	1.39	0.59
Upper secondary final mark	-0.07	0.03	-0.02	0.03	-0.10	0.04
Upper secondary: classical grammar school	*ref.*		*Ref.*		*Ref.*	
Upper secondary: scientific grammar school	1.23	0.59	0.29	0.42	-0.95	0.70
Upper secondary: other grammar school	1.44	1.25	0.29	0.66	-0.49	0.71
Upper secondary: technical institute	1.97	0.85	0.94	0.48	-0.71	0.88
Upper secondary: vocational institute	0.40	1.14	1.97	1.37	-0.76	1.32
Gender: female	*ref.*		*Ref.*		*Ref.*	
Gender: male	-1.76	0.45	-1.57	0.31	0.19	0.74
Age: under 30 years	*ref.*		*Ref.*		*Ref.*	
Age: 30 years old or more	0.96	0.56	-0.01	0.43	-0.11	0.70
Residence zone: North-West	*ref.*		*Ref.*		*Ref.*	
Residence zone: Islands	5.67	1.44	8.11	1.20	9.27	1.78
Residence zone: South	4.86	1.10	7.69	0.87	11.32	1.45
Residence zone: Center	1.73	0.78	3.66	0.76	4.39	1.18
Residence zone: North-East	1.18	0.82	0.64	0.65	0.87	1.04
Parents education: primary	*ref.*		*Ref.*		*Ref.*	
Parents education: tertiary	0.28	0.71	0.76	0.66	1.52	1.14
Parents education: upper secondary	-0.09	0.64	0.95	0.56	1.28	0.94
Parents education: lower secondary	-0.84	0.51	-0.08	0.50	1.38	0.95
Parents social class: manual workers	*ref.*		*Ref.*		*Ref.*	
Parents social class: dependent service class	-0.49	0.69	-1.27	0.57	-1.32	1.01
Parents social class: autonomous service class	-1.54	0.55	-1.60	0.51	-1.22	1.02
Parents social class: white collars	-0.87	0.60	-0.50	0.54	-0.22	0.88
Parents social class: self employed	0.40	0.70	-0.21	0.54	-0.10	0.91
Cohort: 1998	*ref.*		*Ref.*		*Ref.*	
Cohort: 1995	1.04	0.65	-2.07	0.32	2.88	0.76
Cohort: 2001	-0.80	0.53	-1.52	0.36	1.07	0.77
Cohort: 2004	0.41	0.62	-0.64	0.38	-0.07	0.69
Field of study: Scientific	*ref.*		-	-	-	-
Field of study: Medicine	-	-	-4.86	0.32	-	-
Field of study: Economics	-	-	-0.49	0.52	-	-
Field of study: Law	-	-	3.37	0.56	-	-

Table A4. (continued)

Field of study: Pedagogy	-	-	-	-	*ref.*	
Field of study: Communication	-	-	-	-	2.06	1.04
Field of study: Biology/Chemistry	-0.09	0.49	-	-	-	-
Field of study: Literature/Languages	-	-	-	-	3.31	0.94
Field of study: Engineering	-1.61	0.50	-	-	-	-
Field of study: Architecture	-	-	*Ref.*		-	-
Number of cases	14,269		30,551		15,601	
Pseudo R2	0.10		0.14		0.10	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).

Table A5. Results from multinomial logistic regression models predicting unstable job position by field of study (% average partial effects and standard errors)

Unstable job	Scientific		Professional		Humanistic	
	APE	SE	APE	SE	APE	SE
Work experience: none	*ref.*		*Ref.*		*ref.*	
Work experience: occasional jobs	-0.49	0.86	0.54	0.68	1.44	1.15
Work experience: continuous jobs	-6.69	1.37	-7.21	1.03	-12.31	1.47
Graduation final mark: lower	*ref.*		*ref.*		*ref.*	
Graduation final mark: medium	-0.20	1.12	1.41	0.87	3.71	1.35
Graduation final mark: higher	1.38	1.05	-0.57	0.87	2.74	1.31
Graduation delay: 2 or less years	*ref.*		*ref.*		*ref.*	
Graduation delay: 3 or more years	2.11	1.03	-0.03	0.75	0.07	1.13
Upper secondary final mark	-0.05	0.07	-0.14	0.05	-0.11	0.08
Upper secondary: classical grammar school	*ref.*		*ref.*		*ref.*	
Upper secondary: scientific grammar school	-1.06	1.31	-2.48	0.88	-3.07	1.37
Upper secondary: other grammar school	-1.37	2.30	-0.28	1.39	-3.96	1.39
Upper secondary: technical institute	-0.99	1.54	-1.39	1.02	-5.45	1.51
Upper secondary: vocational institute	-1.73	3.03	-2.45	1.94	-2.46	2.54
Gender: female	*ref.*		*ref.*		*ref.*	
Gender: male	-4.51	1.00	-2.95	0.66	-5.08	1.21
Age: under 30 years	*ref.*		*ref.*		*ref.*	
Age: 30 years old or more	-1.19	1.24	-2.66	0.89	-9.81	1.30
Residence zone: North-West	*ref.*		*ref.*		*ref.*	
Residence zone: Islands	1.85	1.74	0.02	1.12	-0.03	1.92
Residence zone: South	-0.61	1.26	0.57	0.91	-4.72	1.46
Residence zone: Center	4.93	1.26	1.45	0.94	1.36	1.40
Residence zone: North-East	4.13	1.24	0.62	0.97	1.48	1.41
Parents education: primary	*ref.*		*ref.*		*ref.*	
Parents education: tertiary	-3.98	1.59	-2.69	1.26	-3.85	1.98
Parents education: upper secondary	-2.22	1.45	-2.16	1.12	-1.84	1.73
Parents education: lower secondary	-2.32	1.36	0.19	1.10	0.24	1.68
Parents social class: manual workers	*ref.*		*ref.*		*ref.*	
Parents social class: dependent service class	1.13	1.77	-1.74	1.31	1.72	2.05
Parents social class: autonomous service class	-3.52	1.66	-3.69	1.20	-2.25	2.00
Parents social class: white collars	0.67	1.45	-1.74	1.14	1.04	1.65
Parents social class: self employed	-0.06	1.52	-1.94	1.17	-1.01	1.75
Cohort: 1998	-0.06	1.28	0.83	0.84	*ref.*	
Cohort: 1995	-0.77	1.19	*ref.*		-10.31	1.15
Cohort: 2001	*ref.*		0.85	0.94	5.33	1.25
Cohort: 2004	1.91	1.21	-0.05	0.89	8.84	1.32
Field of study: Scientific	*ref.*		-	-	-	-
Field of study: Medicine	-	-	-6.71	1.10	-	-
Field of study: Economics	-	-	6.80	1.13	-	-
Field of study: Law	-	-	-0.92	1.01	-	-

Table A5. (continued)

Field of study: Pedagogy	-	-	-	-	*ref.*	
Field of study: Communication	-	-	-	-	-1.65	1.51
Field of study: Biology/Chemistry	0.84	1.21	-	-	-	-
Field of study: Literature/Languages	-	-	-	-	1.87	1.51
Field of study: Engineering	-6.14	1.20	-	-	-	-
Field of study: Architecture	-	-	*ref.*		-	-
Number of cases	14,269		30,551		15,601	
Pseudo R2	0.10		0.14		0.10	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).

Table A6. Results from multinomial logistic regression models predicting overqualified position by field of study (% average partial effects and standard errors)

Overeducation	Scientific		Professional		Humanistic	
	APE	SE	APE	SE	APE	SE
Work experience: none	*ref.*		*Ref.*		*ref.*	
Work experience: occasional jobs	0.51	0.77	0.82	0.55	3.77	1.24
Work experience: continuous jobs	0.95	1.50	0.36	0.97	4.01	2.03
Graduation final mark: lower	*ref.*		*Ref.*		*ref.*	
Graduation final mark: medium	-2.07	0.86	-1.50	0.64	-0.37	1.45
Graduation final mark: higher	-5.19	0.91	-4.91	0.65	-7.50	1.41
Graduation delay: 2 or less years	*ref.*		*Ref.*		*ref.*	
Graduation delay: 3 or more years	1.19	0.96	3.47	0.61	0.20	1.27
Upper secondary final mark	-0.04	0.06	-0.04	0.04	-0.06	0.09
Upper secondary: classical grammar school	*ref.*		*Ref.*		*ref.*	
Upper secondary: scientific grammar school	0.17	1.37	1.94	0.87	4.98	1.62
Upper secondary: other grammar school	1.62	2.58	4.33	1.36	9.54	1.66
Upper secondary: technical institute	2.96	1.59	4.24	0.96	7.79	1.87
Upper secondary: vocational institute	4.54	3.36	1.98	1.94	7.05	3.15
Gender: female	*ref.*		*Ref.*		*ref.*	
Gender: male	5.68	0.82	-0.72	0.53	4.24	1.48
Age: under 30 years	*ref.*		*Ref.*		*ref.*	
Age: 30 years old or more	0.51	1.14	0.50	0.77	-2.46	1.51
Residence zone: North-West	*ref.*		*Ref.*		*ref.*	
Residence zone: Islands	-2.93	1.37	-5.03	0.80	-14.18	1.77
Residence zone: South	-5.59	0.98	-5.66	0.64	-15.35	1.42
Residence zone: Center	1.26	1.06	-1.23	0.70	-1.44	1.49
Residence zone: North-East	2.21	1.00	2.56	0.76	4.26	1.55
Parents education: primary	*ref.*		*Ref.*		*ref.*	
Parents education: tertiary	-3.37	1.44	-3.12	0.97	-1.56	2.25
Parents education: upper secondary	-2.42	1.32	-2.40	0.86	1.51	1.96
Parents education: lower secondary	-1.03	1.21	-1.15	0.83	4.30	1.95
Parents social class: manual workers	*ref.*		*Ref.*		*ref.*	
Parents social class: dependent service class	-0.25	1.55	-0.10	1.09	3.30	2.35
Parents social class: service class self-employed	-0.39	1.55	0.77	1.04	2.28	2.30
Parents social class: white-collar	-0.76	1.29	0.93	0.92	2.40	1.87
Parents social class: self employed	-1.51	1.24	-0.64	0.93	-0.38	1.99
Cohort: 1998	3.82	1.14	-0.85	0.66	*ref.*	
Cohort: 1995	*ref.*		*ref.*		5.39	1.43
Cohort: 2001	2.56	1.21	-0.80	0.74	1.14	1.41
Cohort: 2004	2.26	1.26	-0.31	0.70	-0.22	1.39
Field of study: Scientific	*ref.*		-	-	-	-
Field of study: Medicine	-	-	-18.41	0.42	-	-
Field of study: Economics	-	-	8.41	0.80	-	-
Field of study: Law	-	-	-1.78	0.84	-	-

Table 6. (continued)

Field of study: Pedagogy	-	-	-	-	-2.04	1.79
Field of study: Communication	-	-	-	-	*ref.*	
Field of study: Biology/Chemistry	-9.23	0.94	-	-	-	-
Field of study: Literature/Languages	-	-	-	-	-0.10	1.28
Field of study: Engineering	-7.47	1.01	-	-	-	-
Field of study: Architecture	-	-	*ref.*		-	-
Number of cases	13,436		28,184		12,390	
Pseudo R2	0.09		0.15		0,06	

Source: our calculations on IUGS (1998; 2001; 2004; 2007).