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Linking University Harshness and Students' Choices: Sociodemographic Differences based on Italian Universities' Characteristics

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Abstract

Through the decades, the Higher Education System globally experimented a huge increase in the average marks that each student receives. Among several hypothesis, in this article the idea that grading is one of the tool that every department can use in order to attract a larger amount of students will be stressed. Regarding the Italian case, the speed in obtaining a degree is among the criteria considered by the Ministry of Education in order to evaluate universities, financing them proportionally. As a shortcoming, this can boost an artificial increase in marks. So, the number of students becomes important for those universities with the worst ranking positions, in order to finance themselves through fees. On the other side, it is reasonable to expect that a student emigrates toward places which offer higher chances of receiving a job. In other words, mobility might be driven by the search for better working conditions, and not by the 'ease' of the faculty. Testing this hypothesis, a Multinomial Conditional Logit Model will be implemented in order to measure the probability of choosing a certain destination depending on the harshness and reputation of a University and on the rates of unemployment at a regional level.

Introduction

The main aim of this work is to investigate one of the main theories about the issue of *grading policies* in the Higher Education system and its causes. Indeed, several scholars have tried to consider them as a kind of a strategy, played by the directorates of the degree courses, in order to attract a larger amount of students in their programs. For example, Jewell et al. (2013), model this phenomenon by inserting in their objective function the possibility of inflating grades by a certain department, as a costless way to increase the number of students. On the other side, other scholars argues that grade inflation is always costly, both for its impact on students' future, and on universities' reputation (Ehlers and Schwager, 2016). If the first approach is correct, then it acquires a particular relevance for the Italian framework. As pointed out by Viesti (2018), Italy is suffering a tendency towards a classist Higher Education system, which is more and more difficult to be attained for those students who come from low-income families. Moreover, it seems to be prominent the neo-liberal view of considering Higher Education as a market, providing a private good to be sold to consumers. Despite this, the Article 34 of the Italian Constitution is extremely clear:

> **Art. 34**[1]
> *Schools are open to everyone.*

[1]See: *Constitution of the Italian Republic* available at: `http://www.educational.rai.it/materiali/pdf_articoli/22122.pdf` (04/20/2018).

Primary education, which is imparted for at least eight years, is compulsory and free.

Capable and deserving pupils, including those without adequate finances, have the right to attain the highest levels of education.

The Republic renders this right effective through scholarships, allowances to families and other benefits, which shall be assigned through competitive examinations.

In this framework, in order to evaluate universities and allocate funds, the Ministry of Education, University and Research (MIUR) included the speed in which students obtain degrees. However, without considering their background nor the capability of each university in attracting the best students. The incentives are ambiguous: on the one side, universities have much more propensity in organizing better services for students such as tutoring activities; on the other side, if it is true that grading is able to attract students, then, since universities could be tempted to artificially increase average marks, a perverse incentive arises. This work tries to check if really such policies are actually able to attract newly-graduated high-school students who have to decide where to apply for their Higher Education studies.

In the first section, the relationship between students, department and grading policies will be described through a main recurrence to the literature about Grade Inflation. In the second section, the Italian departments' perspective is presented in light of the changes that the Higher Education System has experimented both at national and global level in the last thirty years. In the third section, the choice behavior of students will be addressed with a main reference to the literature about students' mobility, coherently with the peculiar Italian framework, which sees Italy splitted in two parts which exhibits remarkable gaps. In the fourth section, the dataset is presented. Moreover, some information about Multinomial Conditional Logit Model are provided, together with a brief description of the limitations of the analysis. Finally, estimations are showed with different specification and four robustness checks based on some socio-demographic characteristics of the students sampled. As it will be shown, softening grading policies will emerge as a very poor strategy in order to attract students, especially those who come from those socio-demographic categories which experiment the worst reputation (e.g. Vocational or Technical High School, lowest High School final mark, southerners).

Grading Policies and University Harshness

The debate about the role that grading policies can play in the Higher Education system is alive at least since the seventies. Indeed, Juola (1974) empirically tested the idea that American faculty members could have artificially increased grades, mainly in order to "quiet down" the student bodies' protests caused by the Vietnam War.

The impression is that there are apparently two priors that across the literature characterize the phenomenon of grade inflation: the first is that grade inflation is negative *per se*. It can be supported, even if it is a point which would deserve to be analyzed much more deeply in its determinants. The second is that grade inflation is an outcome desired by students, which is the most questionable point in approaching this problem.

Reading the definition of Grade Inflation by Eiszler (2002), this doubt is reinforced. He states: *"Grade Inflation [...] is, student attainment of higher grades independent of increased levels of academic attainment."* Consequently, students have to be so myopic to desire a easier University Education, no matter if they are less prepared, receiving less valuable degrees and getting more difficult sorting in the job market.

Indeed, Finefter-Rosenbluh and Levinson (2015) address this problem taking teachers and professors as the main actors. As the authors claims, *"Schools, for example, are key institutions in credentialing and sorting people and groups, in gatekeeping, and in stratifying society along a*

variety of dimensions. [...] As an empirical matter, in other words, schools distribute an incredibly powerful positional good—that of education. [...] In this respect, we see the practical ethics of grading and of grade inflation as being two examples of a larger set of dilemmas for educators and educational policymakers about how to enact justice in unjust contexts."[2] Accordingly, it is possible to identify different channels through which soft grading policies can be harmful: *i)* students can lose the incentive for working harder and receive less competencies; *ii)* universities can deprive the degrees of their signalling effect on the job market, losing their own reputation toward employers; *iii)* the entire society can be harmed if the most selective universities would increase grades in order to signal that their students are the best, so speeding up social inequalities.

Despite these evidences about the negative effects of Grade Inflation in the Higher Education System, Jewell *et al.* (2013) develop a theoretical model based on the assumption that students can benefit from higher grades through the greater time they could spend in leisure activities rather than studying. From this perspective, inflating grades become a costless tool in order to reach the desired number of students, increasing the teaching output and, consequently, the department output. Ostrovsky and Schwarz (2010) and Chao, Hao and Suen (2007) try to link grading policies with the Labor Market. The underlying assumption is that grading could be strategically employed by the Departments in order to blend the mediocre students into the good ones. In both cases their conclusion seems to be that Grade Inflation and information suppression by the Departments are to some extent unavoidable, fostering the competition among universities for placing on the Labor Market the greatest number of students as possible. From this point of view, soft grading policies emerge as a strategy in which departments have everything to gain.

This setting is questioned by Ehlers and Schwager (2015), who insert in their model a reputation cost for those Universities that inflate grades. Indeed, if employers start to penalize those students who come from inflating-grades universities, then the following cohorts will prefer to avoid this kind of universities, so signaling they award a much more valuable degree. But, if this is true, then all the theory about "student consumerism" results weakened. Accordingly, if institutions engage so much in grading policies, it is due both to the financial pressure which results in the necessity of enrolling a large number of students, and to a customer-based concept according to which students have to be compensated for the big amount of money spent in their higher education. Consequently, as Chowdhury (2018) argues that students should be educated about grading policies, the literature does not provide any strong evidence about the myth according to which grades increase in order to indulge students' desires (Boretz, 2004; Marsh and Roche, 2000).

Despite these evidences, there is not so much literature available about the relationship between grading policies and students' behaviour in Italy. A broad link between the harshness experienced by students and their performance is addressed by Bratti and Staffolani (2013), who highlights a trade off between performance and time allocation, expecting that, in the attempt of maximizing their own utility, students should actually prefer a easier educational path. Aina *et al.* (2013) investigate the relationship between Universities' characteristics, local characteristics and students' time-to-degree in Italy. Their finding is that if the second always positively affects the third, on the other side the first generates the same effects only if territorial characteristics are not included. This suggests the presence of factors which are exogenous to the Departments themselves in order to fully explain students' behavior in relationship with the choice of department.

Specifically considering grading policies, Bagüés *et al.* (2006, 2008) find that between 1998 and 2004 the Italian Higher Education System experiments a perverse incentive structure, which causes an overall skill mismatch at the labour market. According to their findings, grading policies are softer if a Department is experiencing a low rate of students' enrolment, which

[2] Finefter-Rosenbluh and Levinson, 2015, p. 5.

causes a reduction in its funding provision. Moreover they find that those departments with provide higher average marks are more likely to introduce in the labour market overeducated students. This means that they will have to front lower wages and a higher probability to be unemployed. Finally, De Paola (2008) observes that grading policies in Italy are actually a tool suitable in order to attract a larger amount of students, when a Department faces a low demand, maybe paying only a small cost in terms of reputation.

The Italian Departments' perspective

As already stated, one of the main views about the causes of soft grading policies regards the need of increasing the departments' funding through an always larger number of students. If this is true, it is probably due to the substantial change in the governance of the Universities experienced during the last three decades. Focusing on the Italian case, the Higher Education System developed from the Medieval Age, when universities were private and transnational instruments with the aim to select and to train the future élite, to the *Risorgimento*, when they became components of the public administration, substantially managed and completely financed by the state. In the Postwar period, as the idea of the Universal access to Education arose, the élitarian vocation became weaker, and the the view according to which universities should contribute to the economic development of the country and to the professional training of the students was reinforced. The consequence was to move toward the New Public Management, which guaranteed autonomy to the departments, the State allocating resources according to managerial criteria such as performance, cost-benefit analysis and other indicators (Battini, 2011). In this framework, decentralization was compensated by evaluation. The information asymmetry with the stakeholders of the Education System was reduced creating a pressure for results, but with very unclear goals to be reached. At the same time, the differences between Southern and Northern Universities, apparently inflated by the territorial disparities between those macroareas (Ciani and Mariani, 2014), resulted in strong differences in the allocation of resources among departments. Even when more specific targets are settled - as in 1998 funds were provided in order to reduce imbalances between North and South - the rules were so detailed that universities faced strong difficulties in satisfying those criteria (Perotti, 2002). In the first place, departments tried to front this scenario updating their educational assortment, moving from 1859 different degree courses in 1999 to 5953 in 2007, also because the new 3-years bachelor degrees were not interpreted as a way to prepare students for the job market, but as a first step of a 5-years complete program (Petrosino and Schingaro, 2016; Capano, Regini and Turri, 2017).

Nowadays, Italy registers 4541 degree courses, an expenditure for the Higher Education lower than the OECD average and it is second-last in the number of graduates among the EU countries, also because it is always more difficult to access the System for low income families. From 2004 to 2018 the number of students reduces about 20%, teachers about 17% and courses 22.5%. The financial resources provided by the Ministry of Education are divided into a *base fee* and a *reward fee*. The base fee decreases up to the 26.8% between 2008 and 2015. On the other side, the weight of the reward fee on the total increases progressively. Consequently, if Northern universities experiment a reduction in their financing around 4,3%, more than 12% was suffered by the Southern ones. In particular, the number of students contributes to determine the amount of resources which can be devoted to hire new professors, and the speed of students in obtaining the degree is an indicator of the success of the universities. At the same time, Italy requires the highest students' fees among the European countries with comparable systems. The reward fee provides more money to healthy institutions and less to the weak ones, so increasing the overall gap and chasing a distorted definition of *value* (Banfi and Viesti, 2016; Capano *et al.*, 2017;

Cingari, 2016; Viesti, 2016; Viesti, 2018). In this framework, in which departments are more dependent by students' fees, but also by their success in a short time, it is not difficult to argue that universities can react making themselves easier. In such a framework, it is very hard to argue that the drivers of the students' choice for the degree course should be searched so deeply into the universities' intrinsic characteristics.

Italian Students' Choices between Mobility and Universities' Characteristics

In the previous section it is highlighted why Italian Universities could find useful to intervene on their own policies in order to attract and pull in students. On the other side, it is necessary to address the issue if those kind of strategies could be actually effective. Empirical studies on Italy have already demonstrated how the ministerial rules for the allocation of funds and the advent of the financial crisis in Europe caused an increase in the competition among universities each other. This competition was aimed mainly in attracting more applicants in order to increase their revenues both from governmental and student sides (Cattaneo *et al.*, 2017). As an example, Cattaneo *et al.* (2019) show how departments intervene on their education offering strategically in order to adapt to the new competitive scenarios. The reaction of the student population is to become more selective with the choice of the degree course, also because of the poor conditions of the job market in Italy, which requires to improve as much as possible the signal provided by the studies' degrees (Cattaneo *et al.*, 2018).

The Italian framework is peculiar: in the South there are only two university courses at the same time which can be reached by at least the 95% of the population in less than 60 minutes, against a national average amounting to 8. According to ANVUR[3] and MIUR evaluations, none of these courses for Southern regions provides quality at least corresponding to the national average, and so southerners migrate for an average distance of 143 km, in comparison to the average distance of 40 km covered by North-Westerners and 86 km of national average (De Angelis *et al.*, 2016). Territorial disparities in Italy are undeniable, and this evidence makes difficult to think that what attracts students in a far away university could be the possibility of receiving inflated grades, even admitting the existence of spillovers and reputation effects. Enea (2016), focusing on the transition from bachelor to master degrees, finds that *conditioned to the decision of moving, a Northern University is chosen with a 75% chance.* As he points out, the presence of a much more dynamic labor market in Northern regions is a strong reason why South of Italy loses its best students. Also D'Agostino *et al.* (2018) addresses the relationship between local labor markets and education system as a fundamental source of mobility between students.

Accordingly, government policies based on attractiveness and university ratings to provide financing for tertiary education, risk to overestimate the performance of the North because of its socio-economic wealth. If the Ministry of Education allocates funds proportionally without considering this, a cycle arises in which appealing universities are intrinsically able to attract better students, consequently better professors and researchers, improving their ratings and attracting even more very good students, so increasing the gap with the "worst" universities (Giambona, Porcu and Sulis, 2017; Viesti, 2018). Indeed, through the MIUR evaluations Ciriaci (2013) is able to conclude that Italian students are attracted by the high-quality universities, and if these are present in their residence region, students are less likely to move. Her conclusion is confirmed by Bratti and Verzillo (2019), denoting how a higher quality of research is significant in reducing the outgoing flows. Nevertheless, a consistent effect across studies emerges with regard to the negative effect of the geographical distance and tuition fees (Pigini and Staffolani,

[3]National Agency for the Evaluation of University and Research (trans.).

2016), and the negative correlation between the spatial distribution of university students and the chance of a specific region of maintaining its competitiveness (Bruno and Genovese, 2012). Apparently, nothing suggests that students could be driven by the wish of easier degrees, but they seem to take their choices according with the chances to improve their own life conditions. Regarding this, Croce and Ghignoni (2011), confirm how the migration choice is taken in order to find the more suitable job, in line with the specific skills acquired. Anyway, in their estimations, a higher final mark is always significant in increasing the probability of employment and decreasing the chance of overeducation. Another finding by Croce and Ghignoni (2004) allows them to state that *"...educational level appear to be more important in deciding* to which workers *the firm has to offer an opportunity of training, whereas unemployment rate and wage compression affect the decision of* how many workers *making this offer"*. If this is true, and unemployment rate is able to affect the number of new employees, and if this evidence is taken on board by those students that have to decide if and where emigrate, than the idea reinforces that internal quality of a university for sure matters, but much less than the quality of the territory in which it is settled.

According to the different views exposed, in the next section a model will be presented, which tries to address the presence of grade policies together with the unemployment rates that students have to front. Consequently, students' choices will be analyzed with regard to these two aspects, stressing the idea that a soft grading policy, if used by degree course directorates in order to attract students, is a much less powerful tool than some streams of literature probably expected.

Data and Model

In this section Data and Model will be described in order to proceed to the estimation of the probability to choose migration for Italian students between 2009 and 2011.

Data

Thanks to the Italian University Student Register (ANS) provided by the Ministry of Education, University and Research (MIUR)[4] it is possible to analyze the records of students' career between 2008 and 2014. Due to the necessity of analyzing some aggregate information through degree courses as a whole, in this analysis the sample is restricted to the period 2009-2011. In this way, it is possible to capture more or less all the students enrolled during a certain academic year in a given course. The analysis is also restricted to the public bachelor courses excluding the macro area of medical studies, which presents too many peculiarities, such as a national competitive exam in order to be admitted in. Moreover, it is also excluded the macro area of Architecture, because of some difficulties in distinguishing between the two different departments hosted by the University of Rome "La Sapienza". Thus, the remaining Areas are: Agricultural; Economics and Business; Pharmaceutical; Law; Engineering; Literature and Philosophy; Foreign Language and Literature; Veterinary; Psychology; Communication Science; Education Science; Mathematics, Physics and Nature; Sports Science; Political Science; Statistics; Sociology.

For each student are available several individual information which can affect the decision of applying for a university far away from her residence. In particular, it is possible to identify the Macro-Region of residence (North, Centre, or South and Islands), the gender, the type of high school attended, if it was a *Lyceum*, a technical or a professional school, and the High School Final Mark.

[4]Database MOBYSU.IT [Mobilità degli Studi Universitari in Italia], research protocol MIUR - Universities of Cagliari, Palermo, Siena, Torino, Sassari, Firenze and Napoli Federico II, scientific reference Prof. Massimo Attanasio (UNIPA), Data Source ANS-MIUR/CINECA.

Moreover, thanks to the database available at the National Italian Institute of Statistics (ISTAT), the rates of unemployment for Italian regions were obtained in order to investigate if they were able to condition the students' mobility choices. In particular, for the analysis the rate of unemployment at regional level for people aging between 25 and 34 years old has been chosen. It seems reasonable in light to the fact that a plausible driver for students' mobility could be the possibility of finding a job in a short time after graduation.

Finally, for each degree course in Italy, the *Grade Ratio (GR)* is calculated as:

$$GR_{d|y} = \frac{\frac{1}{n_{d|y}} \sum_{i=1}^{n_{d|y}} \bar{v}_{i|d,y}}{\frac{1}{n_{c|y}} \sum_{i=1}^{n_{c|y}} \bar{v}_{i|c,y}} \geqslant 0,$$

where, n represents the number of students, d represent each single course, c represent the degree class at which that course belongs to, y is the academic year, i is the single student and $\bar{v}$ is the average grade obtained. So, this Grade Ratio represents the average grade provided by a single course in a single year divided by the average grade provided in a single degree class in the same year. In other words, if $GR_{d|y} > 1$, it does mean that the department exhibits - in a certain measure - a softer grading policy than the average of the other courses belonging to the same degree class.

Another indicator for the "harshness" of a course was calculated, which was called the *Dropout Ratio*, in order to represent the rate of retirements from a certain bachelor program. Of course, all those causes which are independent by the will of a student (such as death) are excluded.

$$DR_{d|y} = \frac{\frac{1}{n_{d|y}} \sum_{i=1}^{n_{d|y}} r_{i|d,y}}{\frac{1}{n_{c|y}} \sum_{i=1}^{n_{c|y}} r_{i|c,y}} \geqslant 0,$$

where r can be interpreted as a binary indicator which assumes value 1 if someone retired and 0 otherwise. If it is greater than 1, it does mean that the course presents a rate of retirements greater than the average experimented in its degree class in Italy.

Moreover, the distance between the residence and each possible destination of students is calculated through the Vincenty (1975) formula, starting from the geographical coordinates of the Italian cities.

Finally, other universities' characteristics are obtained from the CENSIS, an Italian Research Centre which every year publishes for one of the main Italian newspapers a guide for the choice of the University. This peculiarity makes those guides very suitable for an analysis about the drivers of the students' decision behavior. From this source several information are taken: the score obtained by each department, the students/professors ratio, the students/residents ratio, and the number of scholarships provided (even if this variable presents a large amount of missing values). Moreover, other information about the territorial conditions can be acquired. In particular, an indicator about the cost of life in each city hosting a university is obtained combining the average prices of coffee, bread, public transport and a "pizza and beer" dinner. As a further matter, the average rent for a room is considered as a proxy for the wealth and the appeal of the considered cities.

In the table below it is possible to control the correlation coefficients for the four main variables in examination: Grade Ratio (GR), Dropout Ratio (DR), University Unemployment Rate (UU) and Distance (DIST). Indeed, keeping into consideration the remarkable gap between North and South in Italy, and the prior which states that grade inflation could be a tool for the poorest universities in order to attract a larger amount of students, a legitimate doubt could arise about a problem of correlation about GR and UU. As it can be seen, this correlation seems to be low enough and anyway always negative, suggesting that universities settled in the wealthiest

locations are those exhibiting softer grading policies. Moreover, also the correlation between grades and rate of retirements appears very low, even though that they should show a strong negative correlation each other, if part of a precise strategy acted by the directorates. A particular observation is deserved by the three subsets based on residence Macro-Areas. Coherently with the picture emerged from the literature, unemployment rates show a strong positive correlation for the Northern students, a strong negative correlation for the Southern students, and are basically uncorrelated for those coming from the Centre of Italy.

Correlation Matrix								
	GR	DR	UU	DIST	GR	DR	UU	DIST
	Overall				North			
GR	1.00				1.00			
DR	-0.1479	1.00			-0.1472	1.00		
UU	-0.1880	0.0538	1.00		-0.1926	0.0534	1.00	
DIST	0.0011	0.0207	0.0700	1.00	-0.1612	0.0553	0.8419	1.00
	Centre				South and Islands			
GR	1.00				1.00			
DR	-0.1415	1.00			-0.1522	1.00		
UU	-0.1859	0.0534	1.00		-0.1845	0.0544	1.00	
DIST	0.0463	0.0591	0.0597	1.00	0.1540	-0.0273	-0.7344	1.0000

Table 1: Correlation coefficients for Grade Ratio (GR), Dropout Ratio (DR), Rate of Unemployment for the regions of Residence (UR) and Residence-University Distance (DIST).

Model

The issue of understanding how students take the decision about where to go for their higher education studies presents several problems. Indeed, the choice behavior presents unobservable characteristics in individuals, but also patterns that can be deduced from the attributes of the alternatives themselves. In order to address this framework, McFadden (1973) proposes the Multinomial Conditional Logit Model as a tool for analyzing a quantitative choice behavior. In this setting, the objects of choice and sets of alternatives available for every student are represented by each Italian University, conditional to the choice of a certain Macro-Area of study. Davies *et al.* (2001) highlights the main advantages to use this model for the case of locational choices by individuals. Besides the fact that it is possible to analyze a wide range of different alternatives, it is very important to point out the crucial role that Multinomial Conditional Logit allows to play for the distance between residence and destination. As it is easy to assume a deterring effect for distance, so it is impossible to include it in standard Logit models based on individual characteristics.

Following Guimaraes and Lindrooth (2005) , let Z_{su} stands for the characteristics of the uth alternative for individual s. Denoting with α the vector of parameters, U will be the number of unordered alternative Universities where each student can choose to apply. Consequently, each alternative in each choice generates its own utility as:

$$U_{us} = Z_{us} + \epsilon_{us}.$$

So, with ϵ_{us} i.i.d., each student chooses the University which maximizes its utility with probability P_{us}:

$$P_{us} = \frac{exp(Z_{us})}{\sum_{u=1}^{U_s} exp(Z_{us})} = \frac{exp(\alpha' x_{us})}{\sum_{u=1}^{U_s} exp(\alpha' x_{us})},$$

where, U_s represents the set of alternatives fronted by each student and x_{us} are the covariates. When these are restricted to the characteristics of individuals, the model collapses into a standard Multinomial Logit. Conversely, the variable $d_{us} = 1$ has to be defined if students s choices the University u (0 otherwise), in order to express the Likelihood Function as:

$$L_{CL} = \prod_{s=1}^{N} \prod_{u=1}^{U_s} p_{us}^{d_{us}}.$$

Thanks to this specification, it is possible to consider the situation in which, across individuals, the number of choices and relative characteristics differ. On the contrary, it could be necessary to implement a Grouped Conditional Logit Model.

Another way to model this kind of data could be through a Poisson model, which returns the same estimations in case as the present, in which locational determinants are purely location-specific (Guimaraes *et al.*, 2003). Nonetheless, Schmidheiny and Brülhart (2010) highlights how the underlying economic implication is substantially different. Indeed, Multinomial Conditional Logit Model is more suitable to analyze the framework described by our data, representing zero-sum reallocations of students across universities. From this point of view, it seems realistic in this context the intrinsic assumption according to which location characteristic does not affect the total number of students who decide to apply for Higher Education, but only their own choice on where to apply.

The estimation strategy will proceed as follows: firstly, Grade and Dropout Ratios and Unemployment Rate of the destination will be inserted as single regressors in order to check their effects. Secondly, they will be inserted together with the distance. Consequently, control variables will be added in order to check the robustness of the main covariates.

Then, for this basic model two extensions will be explored. In the first, the interaction terms between Grade and Dropout Ratios and respectively Unemployment Rate and Distance will be added. So, it is possible to control if grade policies are able to modify the choice of a student with regard to the occupational health of the places to where she moves and the deterring effect of distance. In the second, non-linear effects of Grade and Dropout Ratios are explored through a quadratic function for these two regressors. The intuition behind this specification lies in the fact that if it is true that a student could prefer to move towards the "easiest" universities, it is also true that very extreme values for Grade (Dropout) Ratio can bring to negative (positive) "reputation effects" for a degree course which presents them. Just because grading policies are assumed to work by mean of universities' reputation, in this analysis the two relative variables are associated to the observations for the subsequent academic year. Of course, a student who is thinking to apply in a certain university, cannot know in advance which level of grades and dropouts she will front during her first year of courses.

In order to make easier the interpretation of the results in the quadratic models, Williams (2012) will be followed for interpreting marginal effects. Through this technique it is possible to measure the effect on the conditional mean choice of a change in a specified regressor. This effect will be measured based on the mean value of the other covariates.

This study presents also some limitations. First of all, such an analysis implies that the decision of students is taken in two steps: in the first students decide *what* to study, in the second they decide *where* to study it. Consequently, the estimation focuses on this second step. Besides the fact that it is possible that a student is undecided on studying a certain subject in a certain university, or another subject in another university, in general this assumption could be

acceptable enough. Another strong limitation is that, due to to large amount of alternatives, it is very hard to compute all the different dummies in order to include individual characteristics of decision makers (Guimaraes and Lindrooth, 2005). Consequently, some of them will be explored subsetting the dataset basing on isolated socio-demographic characteristics such residence Macro-Region (North, Centre, or South and Islands), Gender, High School type and High School Final Mark.

Finally, the large amount of students fronting so many alternatives generates a very inflated dataset. The consequence is that almost every coefficient is statistically significant. So, these results have to be taken very carefully.

Estimations and Results

Model Selection

In Table 2 results are presented for the Conditional Multinomial Logit Model. The first three specifications are estimated with only one regressor, respectively Grade Ratio (**I**), which is our proxy of easiness, Dropout Ratio (**II**), our proxy of harshness, and Unemployment Rate (**III**), the most representative variable with respect to the local conditions of the territories in which each university is settled. The first noticeable thing is that Grade and Dropout ratios seem to have both positive effect on the students' choice. This evidence is contradictory, but at the same time appears remarkable how the magnitude of the Grade Ratio's coefficient is very small and the Pseudo R^2 of **I** is basically null. On the contrary, the coefficient of the Dropout Ratio is much more higher and there seem to be a certain proportion of variability accounted for by the model, even if small. On the other side, model **III** expresses a negative and significant coefficient for the Unemployment Rate which will remain consistent for all the different specifications presented, as it will be showed. Consistently, model **IV** improves significantly its variability predictions through the introduction of the Distance between the residence of each student and the the city in which each University is located. Conceivably, also this variable will remain always strongly negative across different specifications.

In model **V**, a set of control variables is added, two of them accounting for the territorial conditions and four more specific regarding university characteristics. Life Cost and Rent are those in the first category. The cost of life - which combines the prices of bread, coffee, bus tickets and a pizza and beer dinner - is negative, as expected. On the other side, the price of renting a room for a student in the city is positively significant. If this result could appear struggling, the explanation should be searched in the double information obtainable from this indicator. Indeed, if it is undesirable to pay a rent too high, at the same time a city which exhibits high prices in this case could be the symptom of a rich place both in terms of wealth and opportunities. In this framework, students and their families seem to be willing of big sacrifices when they have to choose how much to invest in their own future. Regarding the score provided yearly by Censis to the universities, it has a very small power in driving the students' choices, even if positive, as expected. Finally, the ratio between students and residents in each city it is strongly positive, consistently with the idea that students well-evaluate cities with a large population of their own peers. Less understandable is the positive significance for the ratio between students and professors in each university. The same struggling result is reported by Bratti and Verzillo (2019) who explain it guessing that *"[...] these indicators of overcrowding are seizing the level of popularity' (trendiness) of certain courses, so a positive rather than a negative feature of universities (i.e. high demand)"* (p. 15). Complementary, this result could be mainly driven by the denominator of this ratio, revealing the attractiveness of attending courses with a larger number of students, even independently from their educational offer.

Finally, Model **VI** includes the number of scholarships offered by each institution, as reported by Censis' statistics. Data are missing for a large number of universities, so this model will not be chosen as the best specification in order to carry on the following analysis. Nonetheless, it seems interesting to observe how the number of scholarships seem to have a positive impact both on students' choice and variability explanatory power. Moreover, in this specification the Censis Score turns to be negative, so remarking how this indicator do not seem to be so powerful neither in driving students choices nor in capturing the actual perceived quality of each considered institution.

	Conditional Multinomial Logit					
Choice	I	II	III	IV	**V**	VI
Grade Ratio	0.008648			0.047693	**0.0233999**	0.0077415
	(0.0015586)			(0.0019542)	**(0.0022398)**	(0.0033545)
Dropout Ratio		0.3183032		0.3390666	**0.2762353**	0.1680514
		(0.0011014)		(0.0013988)	**(0.0016527)**	(0.0034051)
Unemployment Rate			-0.0959681	-1.058341	**-1.102027**	-1.053105
			(0.0014483)	(0.0044497)	**(0.0052937)**	(0.0093091)
Distance				-3.506392	**-3.690448**	-3.318316
				(0.0051704)	**(0.0052937)**	(0.0087519)
Life Cost					**-0.1936038**	-0.3817367
					(0.0039974)	(0.010223)
Rent					**0.2051487**	0.2304659
					(0.0022234)	(0.0034228)
CENSIS Score					**0.100285**	-0.0012915
					(0.0030628)	(0.0054826)
Stud./Prof.					**0.2086725**	0.2865365
					(0.0036798)	(0.0060452)
Stud./Res.					**2.181805**	1.315419
					(0.0384908)	(0.0832851)
N° Scolarships						0.0939153
						(0.0031536)
Observations	14,393,481	14,095,198	19,953461	13,996,943	**11,217,261**	2,654,239
Log-Likelihood	-1460684.8	-1411360.4	-1839929.9	-816755.69	**-670750**	-220756.38
LR(chi2)	30.21	68196.31	4456.11	1249836.61	**1180729.04**	481507.26
Prob > chi2	0.0000	0.0000	0.0000	0.0000	**0.0000**	0.0000
Pseudo R^2	0.0000	0.0236	0.0012	0.4335	**0.4681**	0.5217

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 2: Selection of the Specification for the Multinomial Conditional Logit Model.

In order to exploit the role of grading policies in students' choices of which university to attend, interaction terms with the Unemployment Rate and the Distance are added with regard to Grade and Dropout Ratio (Table 3). In model **VII** it is showed how the two interactions with the rate of unemployment maintain the negative sign of this latter coefficient. But, as in the case of Dropout ratio the magnitude of the interaction term is much lower than the one of the isolated variable, in the case of the Grade Ratio the size is so big to be potentially able to completely revert the positive effect of a soft grading policy. In other terms, a university settled in a poor region which boosts too much its grades it is penalized by students, but also a department located in a wealthy region is, even if less.

Opposite effect emerges looking at model **VIII**, in which the two interactions with the distance variable have both positive sign. This evidence suggest that both a easy grading policy and

a harsh degree path are able to mitigate the negative effect that mobility has in general on students' choices. Apparently, even if the overall positive effect of the Dropout Ratio remains bigger, Grade Ratio appears as the most powerful variable in softening the negative effect of the distance between the residence and a university.

Remaining on Table 3, in the models **IX** and **X** quadratic terms are added for Grade and Dropout Ratios, respectively. As better clarified in the figure representing margins, both Grade and Dropout Ratios present a significant non-linearity. Concerning the Grade Ratio, both too high and too low values present marginal effects much lower than those exhibited for ranges in the middle. On the other side, the function plotted for the Dropout Ratio is much more increasing, and the predicted probability for the highest extreme value of this variable is much higher than the one predicted for the lower extreme. This suggest that students could positively reward a fair grading policy and, at the same time, also a harsh degree path. This could be the effect of an attempt to receive the better education as possible, obtaining a degree able to provide a good signal on the job market, after the graduation.

	Conditional Multinomial Logit			
Choice	VII	VIII	IX	X
Grade Ratio	0.0207497	0.346058	0.0228157	0.0277558
	(0.0022655)	(0.006247)	(0.0022713)	(0.0022718)
Grade Ratio^2			-0.316803	
			(0.0016517)	
Dropout Ratio	0.2754277	0.4974248	0.2782185	0.5243966
	(0.0022655)	(0.0040578)	(0.0016605)	(0.003184)
Dropout Ratio^2				-0.0793282
				(0.0008924)
Unemployment Rate	-1.103282	-1.124905	-1.095187	-1.124137
	(0.0053044)	(0.0053399)	(0.0053015)	(0.0053495)
Grade#Unemp.	-0.285212			
	(0.0023764)			
Dropout#Unemp.	-0.0211601			
	(0.0014995)			
Distance	-3.688784	-3.798801	-3.690388	-3.690985
	(0.0057771)	(0.0061359)	(0.0057708)	(0.0057949)
Grade#Dist.		0.2696465		
		(0.0049038)		
Dropout#Dist.		0.1867188		
		(0.0032024)		
Controls	Yes	Yes	Yes	Yes
Observations	11,217,261	11,217,261	11,217,261	11,217,261
Log-Likelihood	-670602.63	-668131.34	-670557.76	-666480.54
LR(chi2)	1181024.45	1185967.04	1181114.19	1189268.63
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4682	0.4702	0.4683	0.4715

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^-$ = Coefficient statistically not significant.

Table 3: Specifications with Interaction Terms and Quadratic Model.

In the next subsections, these results, obtained for the overall sample, will be checked controlling their robustness on different sub-samples based on socio-demographic characteristics.

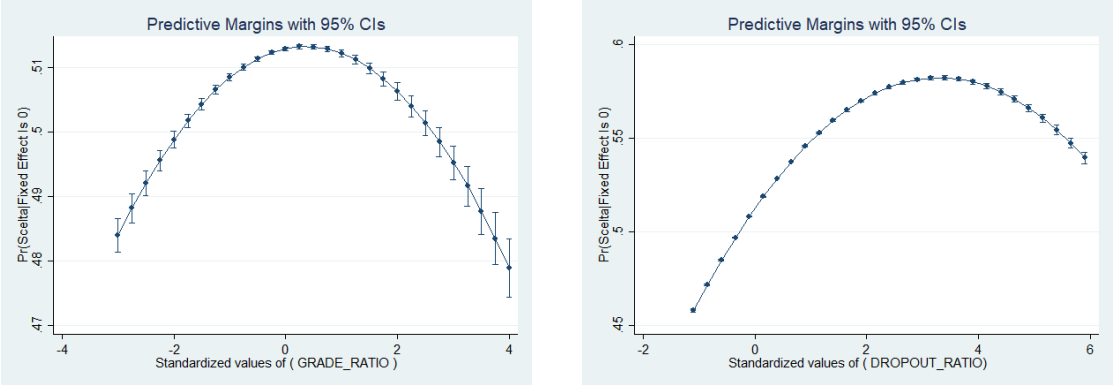

Figure 1: Marginal effects for the quadratic estimates of Grade (left side) and Dropout (right side) Ratios.

Differences by Residence Macro-Regions

	Conditional Multinomial Logit					
	XI			XII		
Choice	North	Centre	South and Islands	North	Centre	South and Islands
Grade Ratio	-0.3121467	-0.0238039	0.1965417	-0.7734358	0.6787448	0.3459261
	(0.0129253)	(0.005363)	(0.0046958)	(0.0222787)	(0.0215477)	(0.0049886)
Dropout Ratio	0.6320364	0.2841057	0.4934571	0.6705681	1.103845	0.4222204
	(0.0074896)	(0.0052244)	(0.0033204)	(0.014314)	(0.0104683)	(0.0037184)
Unemployment Rate	0.9033753	-1.284878	-0.7995581	0.8285333	-1.387992	-0.7938049
	(0.0163761)	(0.0144765)	(0.0065504)	(0.0170257)	(0.0145433)	(0.0065921)
Grade#Unemp.	-0.4677512	0.2057528	-0.1927268			
	(0.0140158)	(0.0092708)	(0.0044212)			
Dropout#Unemp.	0.4071877	-0.1228055	-0.1450335			
	(0.0074946)	(0.006598)	(0.0027684)			
Distance	-6.526558	-5.521157	-2.650626	-6.476107	-5.814697	-2.641929
	(0.0158835)	(0.0197393)	(0.0068691)	(0.0165667)	(0.0207753)	(0.0070865)
Grade#Dist.				-0.6441782	0.5659236	0.3550286
				(0.016139)	(0.0154226)	(0.0042819)
Dropout#Dist.				0.6705681	0.689688	0.0721455
				(0.014314)	(0.0085147)	(0.0029998)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,523,683	2,258,285	4,435,293	4,523,683	2,258,285	4,435,293
Log-Likelihood	-200073.38	-111619.69	-301826.9	-200389.93	-109627.35	-300526.46
LR(chi2)	622787.95	286811.32	385590.51	622154.85	290795.98	388191.40
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.6088	0.5623	0.3898	0.6082	0.5701	0.3924

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 4: Specifications with Interaction Terms differentiated by students' residence Macro-Region.

Tables 4 and 5 present results for the specifications with the interaction terms (**XI** and **XII**) and non-linear terms (**XIII** and **XIV**), dividing the existing sample by the three macro-regions in which students can be resident: North, Centre and South and Islands. Some differences emerge

to be highlighted. Regarding model **XI**, only the subset "South and Islands" is consistent with model **VII**. On the other side, for Northern students the interaction term between Dropout Ratio and Unemployment Rate is positive, while for Central students the interaction term between Grade Ratio and Unemployment Rate is. Moreover, for Northern Students the Unemployment Rate seems to have a positive effect. This significance probably reflect both the peculiar condition of the Northern Italy, which is the wealthier macro-region, and the consequences of such an inflated dataset. As showed, Northern subset exhibits also the highest Pseudo R^2, almost double with regard to the Southern one. The most conservative explanation for this result could be that Unemployment Rate is not so important in driving the Northern students' choice, which is much more straightforward than the one of their Southern peers. Moreover, Southern students are the less negatively affected by the distance from their residence and the University. This result confirm the idea that for them moving far away for attending a degree course it is almost the only option, making much more important to evaluate carefully all the implications of the final choice, even the beneficial presence of a soft grading policy. On the other side, comparing Northern and Central students, they both penalize universities with soft grading, but the first also in the interaction effect, in contrast to the latter. In other words, Northern students move for shorter distances, paying less attention to the territorial conditions in which the university is settled and more attention to the grading policies. The opposite evidence arises regarding Southern students.

	Conditional Multinomial Logit					
	XIII			XIV		
Choice	North	Centre	South and Islands	North	Centre	South and Islands
Grade Ratio	0.1504875	-0.0491444	0.0396871	0.0772765	-0.0455864	0.076041
	(0.0045532)	(0.0054162)	(0.003684)	(0.0042012)	(0.0052896)	(0.0035259)
Grade Ratio^2	-0.853197	0.0002348$^-$	0.0062173*			
	(0.0027695)	(0.0046155)	(0.0028747)			
Dropout Ratio	0.2405378	0.2918327	0.3591594	0.4454153	0.4509146	0.6598373
	(0.0032442)	(0.0053242)	(0.002471)	(0.0058972)	(0.0084727)	(0.0047157)
Dropout Ratio^2				-0.716973	-0.0736611	-0.0891097
				(0.0016655)	(0.0032142)	(0.0012246)
Unemployment Rate	0.8982199	-1.337348	-0.7795806	0.8602041	-1.324652	-0.826471
	(0.0170927)	(0.014443)	(0.0064514)	(0.0172103)	(0.0142909)	(0.0065862)
Distance	-6.393844	-5.547616	-2.604511	-6.36349	-5.555592	-2.605166
	(0.015576)	(0.0197565)	(0.0067242)	(0.0156075)	(0.0196968)	(0.0067676)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,523,683	2,258,285	4,435,293	4,523,683	2,258285	4,435,293
Log-Likelihood	-201196.49	-112198.38	-303631.07	-200779.71	-111889.47	-300714.54
LR(chi2)	620541.73	285653.92	381982.18	621375.29	286271.74	387815.24
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.6066	0.5601	0.3861	0.6074	0.5613	0.3920

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^-$ = Coefficient statistically not significant.

Table 5: Quadratic Models differentiated by Students' residence Macro-Region.

Also in model **XII**, Northern students appear as the more virtuous with respect to fair grading policies, so that the interaction between Grade Ratio and Distance remains negative. On the other side, Central and Southern students exhibits results consistent with model **VIII**. Anyway, a clear evidence does not emerge: in this case Central students seem to be more positively affected by a high Dropout Ratio, while Southern students appear to be more willing in moving for a

longer distance if repayed with a softer grading policy.
Consistent conclusions emerge looking at model **XIII** and **XIV** (Table 5). Nonetheless, the most impressive result materializes looking at predicted marginal effects of Grade Ratio between Centre and South and Islands. In the first case the quadratic component is not significant and the effect is linearly decreasing. In the second case the quadratic component is significant only at 10% level, and it is positive as in the linear coefficient, resulting in a slightly exponential increasing function. Analyzing these results jointly, it comes up that Southern students are those exposed to the hardest choices, careful to move toward wealthier locality and penalizing less the most far universities. At the same time, they are also much more inclined in rewarding universities which adopts softer grading policies.

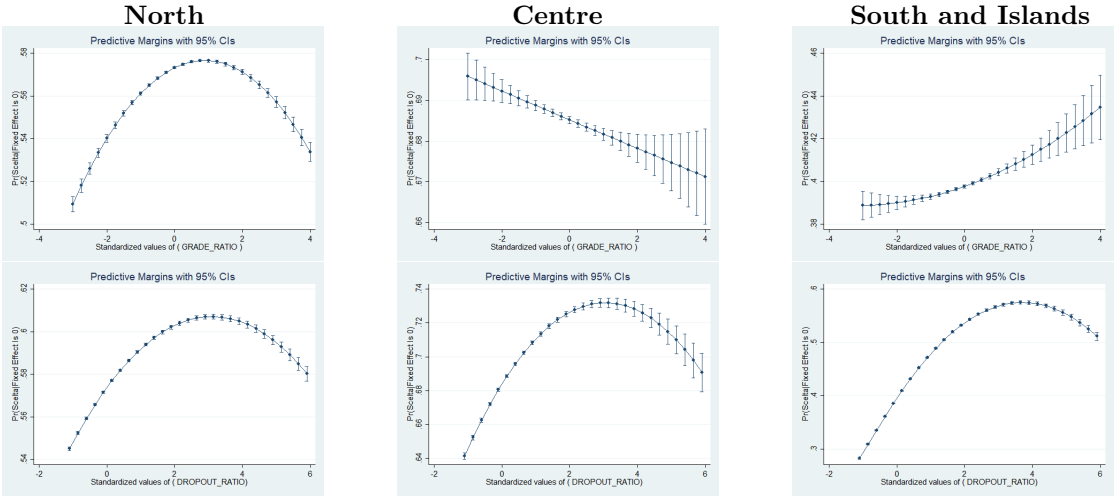

Figure 2: Marginal effects for the quadratic estimates of Grade (above) and Dropout (below) Ratios.

Differences by Gender

Looking at the results of the models **XV**, **XVI**, **XVII** and **XVIII** (Tables 6 and 7), almost any differences emerge about the decision behavior of females and males regarding which university to attend. The only apparent distinction is that males seem to be slightly more sensitive to soft grading policies. Indeed, in models **XV** and **XVII** the Grade Ratio is even not significant for women, who appear also to be very discouraged in attending universities exhibiting easier gradin policies and settled in cities with high unemployment rates. Anyway, no substantial gender differences emerge from this analysis, in general.

	Conditional Multinomial Logit			
	XV		XVI	
Choice	Female	Male	Female	Male
Grade Ratio	0.0030891^{-}	0.0363907	0.1744598	0.4951864
	(0.0031151)	(0.003331)	(0.0090745)	(0.0085153)
Dropout Ratio	0.2397453	0.3069978	0.3633184	0.5975912
	(0.0023928)	(0.0023207)	(0.0065019)	(0.0050482)
Unemployment Rate	-1.092859	-1.119979	-1.103617	-1.150234
	(0.0074898)	(0.0075491)	(0.0075036)	(0.0076471)
Grade#Unemp.	-0.171612	-0.0419241		
	(0.003294)	(0.0034538)		
Dropout#Unemp.	-0.0110967	-0.025191		
	(0.0021249)	(0.0021564)		
Distance	-3.788341	-3.585411	-3.832941	-3.774543
	(0.0082133)	(0.0081332)	(0.0085329)	(0.0088569)
Grade#Dist.			0.1415204	0.3801525
			(0.0071322)	(0.0066507)
Dropout#Dist.			0.1032341	0.2469715
			(0.0050547)	(0.0040277)
Controls	Yes	Yes	Yes	Yes
Observations	5,731,143	5,486,118	5,731,143	5,486,118
Log-Likelihood	-339063	-330868.49	-338744.31	-328252.04
LR(chi2)	628525.24	553840.67	629163.43	559073.57
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4810	0.4556	0.4815	0.4599

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 6: Specifications with Interaction Terms differentiated by students' gender.

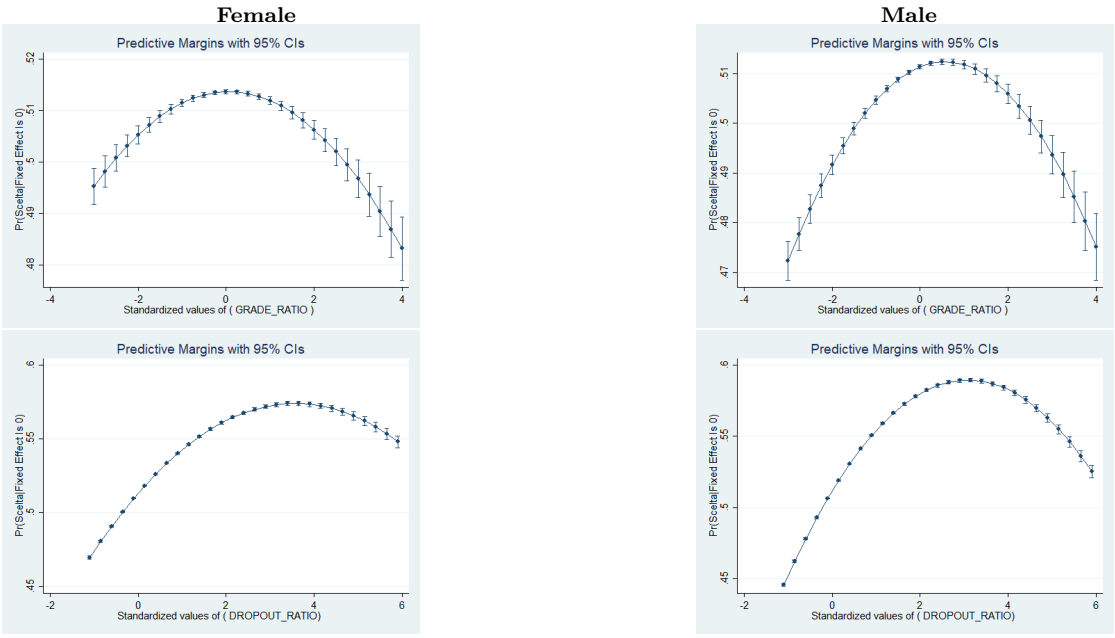

Figure 3: Marginal effects for the quadratic estimates of Grade (above) and Dropout (below) Ratios.

	Conditional Multinomial Logit			
	XVII		XVIII	
Choice	Female	Male	Female	Male
Grade Ratio	0.0029484^{-}	0.0429847	0.0112642	0.0393284
	(0.0031333)	(0.0033151)	(0.0031291)	(0.0033287)
Grade Ratio^2	-0.0242927	-0.0380847		
	(0.0022736)	(0.0024137)		
Dropout Ratio	0.2406802	0.3122611	0.4281308	0.6216946
	(0.0024019)	(0.0022982)	(0.0044981)	(0.0045278)
Dropout Ratio^2			-0.059991	-0.100647
			(0.0012274)	(0.0013105)
Unemployment Rate	-1.086922	-1.107736	-1.111216	-1.13984
	(0.0074825)	(0.0075465)	(0.0075305)	(0.0076389)
Distance	-3.788647	-3.588897	-3.789913	-3.589535
	(0.0082079)	(0.0081221)	(0.0082358)	(0.0081623)
Controls	Yes	Yes	Yes	Yes
Observations	5,731,143	5,486,118	5,731,143	5,486,118
Log-Likelihood	-339027.72	-330858.67	-33827.32	-327702.45
LR(chi2)	628596.61	553860.33	630997.43	560172.76
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4811	0.4556	0.4829	0.4608

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 7: Quadratic Models differentiated by Students' Gender.

Differences by Secondary Education Degree

In this section students are divided among those who attended a *Lyceum* as a Secondary Education School, who attended a *Technical* School, and who attended a *Professional* School. Looking at the model **XIX**, also in this case a contrasting evidence emerges regarding Grade and Dropout Ratio. Indeed, if students from *Lyceum* evaluates well a soft grading policy, Technical and Professional scholars are negatively affected by it. On the contrary, Dropout Ratio is always positive. On the other side, the two interaction terms always exhibit negative coefficient, confirming the idea that the territorial conditions in which a university is settled matter much more than departments' policies. Remarkably, also the Distance variable progressively increases its negative effect from *Lyceum* toward Professional Schools.

	Conditional Multinomial Logit					
	XIX			XX		
	Lyceum	Technical	Professional	Lyceum	Technical	Professional
Grade Ratio	0.0558024	-0.0410929	-0.0259225	0.3290575	0.3587158	0.3758753
	(0.0027513)	(0.0046882)	(0.0086217)	(0.0073104)	(0.0140895)	(0.0263255)
Dropout Ratio	0.2916531	0.2500159	0.1699382	0.5059262	0.4608973	-1.104803
	(0.0019496)	(0.0036198)	(0.0069362)	(0.0045407)	(0.0102572)	(0.0204509)
Unemployment Rate	-1.088493	-1.119316	-1.109586	-1.112401	-1.134099	-1.104803
	(0.0063981)	(0.0110918)	(0.0204423)	(0.0064432)	(0.0111496)	(0.0204509)
Grade#Unemp.	-0.0224471	-0.035407	-0.0878212			
	(0.0029409)	(0.0047262)	(0.0086283)			
Dropout#Unemp.	-0.02308	-0.0127156	-0.0336657			
	(0.0017782)	(0.0032547)	(0.0060965)			
Distance	-3.579389	-3.978379	-4.013486	-3.69568	-4.059499	-4.052207
	(0.0068613)	(0.0126758)	(0.0223441)	(0.0073224)	(0.0132747)	(0.0230435)
Grade#Dist.				0.230232	0.3220833	0.3156776
				(0.0057802)	(0.0108771)	(0.02041481)
Dropout#Dist.				0.1828746	0.1725399	0.0691417
				(0.0036042)	(0.0079878)	(0.0166772)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,546,579	2,733,180	800,612	7,546,579	2,733,180	800,612
Log-Likelihood	-453172.22	-157860.13	-48074.405	-451582.28	-157332.51	-48017.797
LR(chi2)	786698	290821.29	96988.00	789878.04	291876.52	97101.21
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4647	0.4795	0.5022	0.4665	0.4812	0.5028

N.B. All coefficients are statistically significant at 1% level.

Table 8: Specifications with Interaction Terms differentiated by students' High School type.

More predictable results emerge from model **XX**, in which Grade Ratio positively affects student choices. At the same time, the opposite appears regarding the Dropout Ratio, which becomes negative in the case of Professional students. Consistently with model **VIII**, the two interaction terms with the Distance are always positive.
Consistent results are those obtained from model **XXI**. In particular, the Figure shows clearly how the predicted marginal effect for the lower Grade Ratios are much higher in the case of Professional and Technical School than in the *Lyceum* case. Nevertheless, the marginal effects predicted for the highest Grade Ratio, and the level at which this tendency is maximized, are at the end pretty much equal.
Finally, model **XXII** points in the same direction. Indeed, the Grade Ratio seems to have little importance, even negative in the case of Technical Schools, and not significant in the case of Professional Schools. On the other side, predictions at margins are lower for lower levels of the Dropout Ratio, and higher as they increase. It is noticeable as, also in this case, students with so different backgrounds seem to be so attracted by harsher universities.

	Conditional Multinomial Logit					
	XXI			XXII		
	Lyceum	Technical	Professional	Lyceum	Technical	Professional
Grade Ratio	0.0556965	-0.0369543	-0.0107275^{-}	0.0618931	-0.0319187	-0.0103621^{-}
	(0.0027625)	(0.0046757)	(0.0085188)	(0.0027644)	(0.0047063)	(0.0084936)
Grade Ratio^2	-0.0338911	-0.014581	-0.0161781			
	(0.0020895)	(0.0031194)	(0.0060367)			
Dropout Ratio	0.2947787	0.251214	0.1697816	0.5554139	0.493993	0.2747677
	(0.0019632)	(0.0036194)	(0.0069785)	(0.0038352)	(0.0066795)	(0.0121753)
Dropout Ratio^2				-0.0816442	-0.0842548	-0.036765
				(0.0010511)	(0.0020042)	(0.003492)
Unemployment Rate	-1.083919	-1.106987	-1.09138	-1.110774	-1.139185	-1.108274
	(0.0063975)	(0.0110694)	(0.0203917)	(0.0064607)	(0.0111577)	(0.0204579)
Distance	-3.581892	-3.979151	-4.011795	-3.582441	-3.980283	-4.008899
	(0.0068522)	(0.0126745)	(0.0223195)	(0.0068849)	(0.0127091)	(0.0223384)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,546,579	2,733,180	800,612	7,546,579	2,733,180	800,612
Log-Likelihood	-453133.84	-157880.88	-48131.609	-450007.42	-156929.08	-48078.177
LR(chi2)	786774.92	290779.78	96873.59	793027.76	292683.40	96980.45
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4647	0.4794	0.5016	0.4684	0.4825	0.5021

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 9: Quadratic Models differentiated by Students' High School Type.

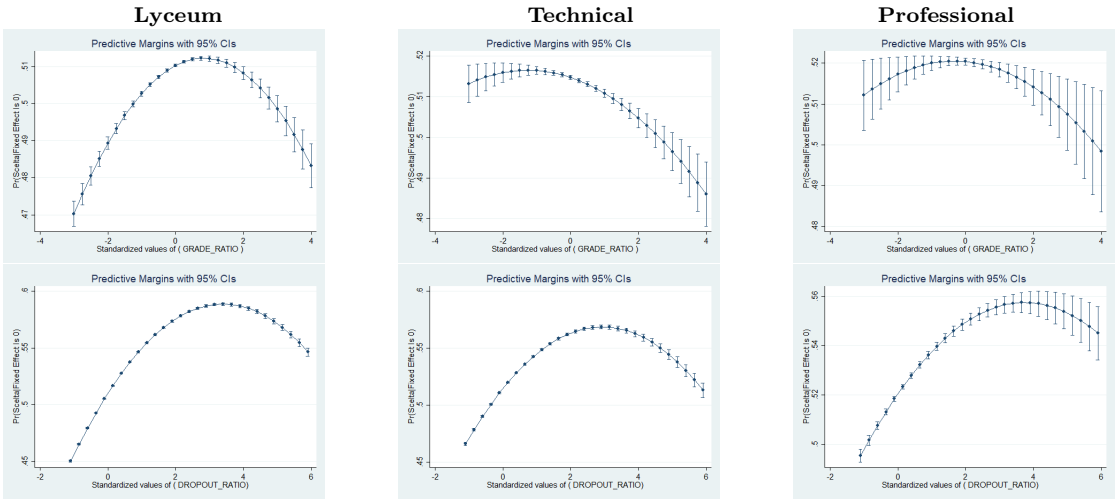

Figure 4: Marginal effects for the quadratic estimates of Grade (above) and Dropout (below) Ratios.

Differences by High School Final Marks

Finally, some considerations about the final mark obtained at the end of the High School by students. For the sake of simplicity, the overall data are subsetted dividing the sample according to the most realistic psychological thresholds conceivable : from 60 to 79; from 80 to 89; from 90 to 100 with Honor. Looking at model **XXIII**, students with the lowest evaluations does not seem to be affected by soft grading policies, contrarily with the expectations. On the other side,

students with highest evaluations are positively attracted by the Grade Ratio. The effect of the Dropout Ratio is consistent with the evidence examined above for all the three categories. In a nutshell, for each subset a soft grading policy has at least a null effect under the same level of unemployment rate, while the only category which rewards an easy grading to parity of distance is the one of those students with highest evaluations (Model **XXIV**).

	Conditional Multinomial Logit					
	XXIII			XXIV		
	[60,80]	(80,90]	(90,Honor]	[60,80]	(80,90]	(90,Honor]
Grade Ratio	-0.004931^{-}	0.0284845	0.0835649	0.2352991	0.3639855	0.4804955
	(0.003096)	(0.0046213)	(0.0048514)	(0.0092592)	(0.0127981)	(0.0108053)
Dropout Ratio	0.2431423	0.2844107	0.3357643	0.3967601	0.4905195	0.5925611
	(0.0023168)	(0.0033389)	(0.0033403)	(0.0066083)	(0.0083618)	(0.0060615)
Unemployment Rate	-1.116539	-1.071666	-1.075599	-1.131028	-1.092026	-1.101992
	(0.0074138)	(0.0107986)	(0.107576)	(0.0074469)	(0.0108824)	(0.010876)
Grade#Unemp.	-0.0225683	-0.0270161	-0.0506223			
	(0.0032423)	(0.0048203)	(0.0051099)			
Dropout#Unemp.	-0.0236821	-0.0247871	-0.012394			
	(0.0021038)	(0.0030241)	(0.003044)			
Distance	-3.894091	-3.698906	-3.247262	-3.954917	-3.802843	-3.444264
	(0.0081819)	(0.0030241)	(0.0112623)	(0.008561)	(0.0125995)	(0.0122844)
Grade#Dist.				0.1942007	0.2799695	0.3502637
				(0.0071734)	(0.0100616)	(0.0087288)
Dropout#Dist.				0.1248794	0.1730503	0.2372856
				(0.0051168)	(0.0065941)	(0.0049387)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,175,403	2,682,634	2,359,224	6,175,403	2,682,634	2,359,224
Log-Likelihood	-359250.98	-159116.76	-149975.52	-358764.01	-158558.45	-148533.71
LR(chi2)	687195.35	280480.80	217867.05	688169.29	281597.42	220750.65
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4889	0.4685	0.4207	0.4896	0.4703	0.4263

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 10: Specifications with Interaction Terms differentiated by students' High School Final Mark.

This evidences are substantially confirmed by models **XXV** and **XXVI**. Indeed, if the effect of the Dropout Ratio is pretty much the same across those subsets, the effect of the Grade Ratio appears to be more negative in the case of poorly-evaluated students, then in the case of their high-graded colleagues, as it is shown by the Figure 5.

	Conditional Multinomial Logit					
	XXV			XXVI		
	[60,80]	(80,90]	(90,Honor]	[60,80]	(80,90]	(90,Honor]
Grade Ratio	-0.0031327^{-}	0.0275963	0.0886307	0.0012718^{-}	0.0348279	0.0938975
	(0.0030943)	(0.0046908)	(0.0048253)	(0.0030866)	(0.0046588)	(0.0049023)
Grade Ratio^2	-0.0337445	-0.0482482	-0.0087182			
	(0.0022654)	(0.0034994)	(0.0033331)			
Dropout Ratio	0.2464193	0.2881765	0.3355532	0.4653468	0.5393264	0.6454425
	(0.0023347)	(0.0033592)	(0.0033326)	(0.0043863)	(0.006479)	(0.0066469)
Dropout Ratio^2				-0.0724945	-0.0805563	-0.0950653
				(0.0012461)	(0.0018088)	(0.0018255)
Unemployment Rate	-1.109056	-1.060596	-1.070116	-1.139805	-1.093237	-1.089284
	(0.00741)	(0.010793)	(0.0107527)	(0.0074719)	(0.0109017)	(0.0108639)
Distance	-3.894517	-3.701837	-3.250445	-3.893697	-3.703431	-3.256385
	(0.0081734)	(0.0118634)	(0.011253)	(0.0082003)	(0.0119149)	(0.011325)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,175,403	2,682,634	2,359,224	6,175,403	2,682,634	2,359,224
Log-Likelihood	-359212.22	-159057.6	-150023.52	-357518.6	-158085.91	-148524.19
LR(chi2)	687272.88	280599.12	217771.05	690660.11	282542.49	220769.69
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.4889	0.4687	0.4206	0.4913	0.4719	0.4263

N.B. Unless otherwise specified, all coefficients are statistically significant at 1% level.
* = Coefficient statistically significant at 10% level. ** = Coefficient statistically significant at 5% level.
$^{-}$ = Coefficient statistically not significant.

Table 11: Quadratic Models differentiated by Students' High School Final Mark.

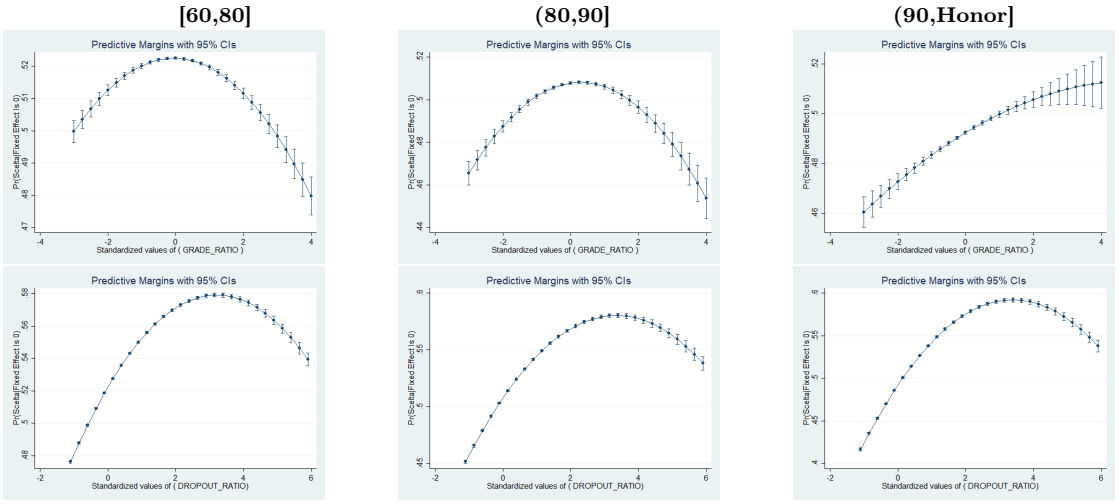

Figure 5: Marginal effects for the quadratic estimates of Grade (above) and Dropout (below) Ratios.

Conclusions

At the very end, the main aim of this work was just to try to restore the reputation of young Italian students. In spite of those want to depict this particular class of population as composed mainly by people who are in search for the easiest road, the estimation presents a very different story. If really departments' directorates want to soften their grading policies in order to attract

students, they are choosing a very poor strategy. Anyway, this analysis is not able to infer about a conscious recourse to this tool, even if it is a good point to be investigated. At the moment, it seems only possible to say that, if grading has any effect in attracting students, this is generally negative. Indeed, the results describe a very different picture than the one expected. Italian students are willing to make very difficult choices. Besides individual enterprise and craving for adventures, it is never easy to leave their homes, starting over with new friends, new relationships and new habits. In most cases, students move from very little and peripheral towns towards the biggest cities in the country, so perceiving the transfer as even more upsetting. Nevertheless, they leave for a very long distance mainly because they feel to have to do it. In a country such as Italy, which sometimes appears to be divided in two parts with a huge social and economic gap, emigration becomes the best option in order to improve their life condition, and to find a job in line with the acquired skills.
Moreover, a prior which states that a university can attract more students by means of grades it is not harmless. Indeed, it damages at the same time the reputation of students and of the Higher Education System as a whole, which is maybe worse. It is very sad and dangerous to think that our universities could be institutions ready for anything in order to increase their revenue, even if this turns out to impoverish the competencies provided and their reputation itself.
Nevertheless, it is also undeniable that increasing grades appear in the Italian Higher Education System such as all over the world, as showed by a rich stream of literature. But the main finding of this paper is that it is a situation that does not pay at any level. Indeed, if always more scholars are devoting their studies to the phenomenons of overeducation and job mismatching, it can be also attribute to the perverse effects of grade inflation. A defective competition among students push them in trying to get always higher marks, which should have the role to improve the individual signal on the job market. But, greater the resulting grade compression, weaker the signaling effect provided by each degree, higher the possibility of mismatching between the job position obtained and the skills acquired during studies. And to make matters worse, the issue can be addressed also with regard to Social Inequalities. Indeed, it is reasonable to expect that this competition among students would advantage the richest, as their higher income permits them to spend more time in the university system, paying an higher amount of fees, in order to force grade compression. Some hints about this hypothesis are obtainable by the presented results. It is remarkable how students from Professional and Technical High School, and those with low final marks, are the more deterred by soft grading policies, as they should improve the poor signal that their credentials have acquired until that moment. As it was showed, in general Dropout Ratio presented a much bigger attractive power than the Grade Ratio, highlighting anyway a general will of obtaining the best education as possible without shortcuts.
Finally, from this work is also possible to derive suggestions for the policy makers. In the situation which has been described, a system of funding allocation which rewards universities with higher ranking positions, and penalizes those with lower ones, results in an engine to increase the North-South gap in Italy. What is more, this study shows how, in order to reduce this gap, it would be necessary a much more wide perspective, which has to be able to address the fact that reforming universities is not enough. It is necessary to work on the territory, improving the interconnections between the Higher Education System and its business fabric. If a region is not appealing in its employment sector, neither its universities are.

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