

University Attendance within Euro Student

La frequenza dei corsi universitari nell'ambito di Euro Student

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Riassunto: Una delle anomalie del sistema universitario italiano consiste nel fatto che molti degli iscritti non seguono con regolarità le lezioni, il che contribuisce, almeno in parte, ad un allungamento della durata degli studi universitari. Il presente lavoro propone una prima analisi del fenomeno attraverso i dati forniti dall'indagine Euro Student 2000. La ridotta o nulla frequenza è legata sia alla presenza, non irrilevante, di studenti-lavoratori che alla convinzione che le lezioni non siano molto utili sia all'apprendimento della disciplina che alla preparazione degli esami, così che molti affermano di preferire lo studio individuale. A parità di tipologia di studente, la frequenza alle lezioni varia sensibilmente tra gruppi disciplinari diversi, il che può essere legato sia ad auto-selezione che ad una diversa organizzazione dei corsi.

Keywords: Euro Student, university attendance, course evaluation, probit models.

1. The Euro Student Survey

This paper analyses data gathered from the Euro Student Survey, by means of a mail questionnaire sent to a sample of the students enrolled in the 1999/2000 academic year. The survey is performed every three years from the Rui Foundation and the University of Camerino; this year the survey was promoted by the Comitato per la Valutazione del Sistema Universitario (MIUR). The survey has the objective to evaluate the Italian students life and study conditions and to allow the construction of indicators for international comparisons, within a project promoted by the ECSTA (European Council for Student Affairs). The main subjects of the survey are: social background of the students, pre-university studies, motivations of the present course choice, degree of attendance to the classes and use of the university services, reasons of a non regular or null attendance, international mobility, costs and revenues of the student. A special section is devoted to classes and teachers evaluation. The student has to state the degree of satisfaction on some aspects of the course organization, such as: the library, the laboratories, and other services, the teachers and so on; and then the student gives a general judgement on classes utility and teachers' abilities. This paper tries to describe the student and course characteristics that affect the student class attendance.

2. Attendant and non-attendant students characteristics

Students who attend at least one class and have passed one or more examination during the last year could be considered *active* students. Among the 7500 respondents of the Euro Student survey, 79% of the students attend classes regularly: this percentage raise

to 87% for first year-students and decreases to 72% for students beyond regular years. Among the students interviewed, only 5.4% gave no examination during the last year, but this percentage varies from 1.99 to 15.93, according to the rate of attendance (Table 1), and the average number of examinations is highest for students attending all classes and lowest for non-attendant students. The preceding descriptive analysis, shows clearly the importance of classes attendance in order to pass the examinations regularly.

Table 1 *Students, study hours and number of examinations by course attendance.*

	<i>Classes attended</i>				<i>Total</i>
	<i>All</i>	<i>Almost all</i>	<i>Some</i>	<i>None</i>	
<i>Students %:</i> First year	49.72	37.74	7.74	4.81	100.00
Other regular years	39.08	43.10	10.68	7.14	100.00
After regular year	23.42	48.85	12.87	14.86	100.00
<i>Average hours/week:</i> classes	22.46	14.37	7.52	0.00	15.09
personal study	18.96	20.30	20.27	17.90	19.60
<i>N. of exam.:</i> First year	3.78	3.01	2.07	2.14	3.31
Other regular years	5.25	4.48	3.94	3.68	4.67
After regular years	3.71	3.28	2.79	2.20	3.16
<i>Total</i>	4.57	3.81	3.27	2.72	4.91
<i>Students with 0 exams %</i>	1.99	4.93	8.72	15.93	5.37

Among the non-regular-attendant (some classes) and non-attendant students, the principal reasons of non attendance are the preference for individual study and the job schedule for the working students. The preference for individual study seems mainly due to two alternative reasons: the inefficacy of the lessons and the need of more time to study. Anyway, the students who say to need more time to study do not present an average number of study hours per week bigger than the attendant students.

While the job is an objective condition that can reduce both the attendance to classes and the hours of personal study, the other reasons are purely subjective, so about 75% of the students who judge not useful the current year classes, agree with the subsequent statement on the general contribution of the classes to the learning of the discipline, and more than 50% agree with the other statements on the aspects of classes utility.

2.1 An ordinal probit model for the probability of class attendance

The decision to attend the classes depends on several individual and contextual factors. As a first approximation in the analysis of the phenomenon, we have estimated an ordinal probit model (Greene, 2000), where the ordinal response variable Y represents the degree of attendance (1=attendance to all classes, 2=attendance to almost all classes, 3=attendance to some classes, 4=no-attendance).

In short, in correspondence to the observed ordinal response variable Y , for the latent continuous variable Y^* , which represents the intensity of the attendance, we define the following model: $y_i^* = \alpha + \beta' \mathbf{X}_i + \varepsilon_i$; under the hypotheses $\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$, with $i=1, 2, \dots, n$ respondents; $k=1, \dots, 4$ observed categories. $\mathbf{X}_i$ is the $p \times 1$ vector of observed variables, β is the $p \times 1$ vector of the coefficients referred to that covariate, the random variables ε_i are individual disturbances, or errors. In order to identify the model, the variance of these variables is assumed equal to one. The observed ordinal variable Y is linked to the latent Y^* through the following relationship:

$$y_i = k \text{ if and only if } \gamma_{k-1} < y_i^* \leq \gamma_k, \quad -\infty = \gamma_0 \leq \gamma_1 \leq \gamma_2 \leq \gamma_3 \leq \gamma_4 = +\infty$$

$$P(y_i = k) = P(\gamma_{k-1} < y_i^* \leq \gamma_k) = \Phi(\gamma_k - \alpha - \beta' X) - \Phi(\gamma_{k-1} - \alpha - \beta' X_i)$$

These equations define an ordinal probit model. The results of the estimated model are reported in Table 3. As expected, both individual and contextual variables are relevant factors for the degree of class attendance. The estimated probability to attend all the classes, for the average student, is equal to 44.4%. This probability varies according to the student background: a student coming from a lyceum has a 2.5% higher probability, while for a student coming from a technical school the probability decreases by 3%; the higher the student final examination degree, the higher the probability (about 0.6% for each point, that is the full-attendance probability range from 34% for the ‘worst’ to 52% for the ‘best’ student).

Table 3 Probit model: coefficients and probabilities of attendance estimates.

Variable	Coeff	P(Y=1 X)	P(Y=2 X)	P(Y=3 X)	P(Y=4 X)
Average student ^o	.	0.44438	0.48074	0.05624	0.01864
+1 year duration	-0.0416**	0.42800	0.49107	0.06032	0.02062
+1 point final evaluation	0.0159**	0.45068	0.47667	0.05473	0.01792
<i>High school type (reference: other)</i>					
Classic and scientific high school	0.0629*	0.46933	0.46429	0.05043	0.01595
Technical high school	-0.0840*	0.41142	0.50109	0.06467	0.02282
<i>Year of study (reference: first)</i>					
Other regular years	-0.2592**	0.34491	0.53632	0.08466	0.03411
After regular years	-0.3818**	0.30095	0.55416	0.10042	0.04448
<i>Working status (reference: full-time student)</i>					
occasional job	-0.1535**	0.38462	0.51631	0.07222	0.02685
part-time job	-0.5172**	0.25556	0.56648	0.11923	0.05873
full-time job	-1.4591**	0.05491	0.43761	0.24104	0.26645
<i>Class usefulness on:</i>					
discipline learning	0.1868**	0.51872	0.42943	0.04023	0.01162
Exam preparation	0.2575**	0.54680	0.40843	0.03513	0.00964
usefulness indicator	0.0810**	0.47653	0.45939	0.04884	0.01524
<i>University variables (reference: private, big)</i>					
public university	0.1258**	0.49437	0.44697	0.04505	0.01360
medium university	0.1045**	0.48591	0.45291	0.04682	0.01436
small university	0.0584**	0.46752	0.46551	0.05084	0.01613
<i>Subject group(reference: Scientific group)</i>					
Chemistry and Pharmacy	0.0821	0.47695	0.45910	0.04875	0.01520
Biology & Geology	-0.1638	0.38067	0.51845	0.07338	0.02750
Medicine	0.3048*	0.56550	0.39403	0.03200	0.00848
Engineering	-0.1014	0.40466	0.50505	0.06651	0.02378
Architecture	-0.1774*	0.37552	0.52118	0.07493	0.02837
Agrarian	0.0295	0.45604	0.47316	0.05347	0.01733
Business & Statistics	-0.4130**	0.29018	0.55771	0.10463	0.04748
Politics & Sociology	-0.7352**	0.19077	0.56889	0.15144	0.08890
Law	-1.1932**	0.09125	0.50635	0.21553	0.18687
Humanities	-0.6644**	0.21062	0.57050	0.14083	0.07804
Languages	-0.5702**	0.23883	0.56907	0.12690	0.06520
Education	-0.8697**	0.15635	0.55954	0.17155	0.11256
Psychology	-0.7918**	0.17575	0.56594	0.15994	0.09836

^oAverage student: high school: type=other, final evaluation=49/60; non-working student; first year of course; negative evaluation on classes usefulness with respect to the discipline learning and the exam preparation, classes utility indicator=0; big private university, scientific group. Prob> χ^2 : **< 0.05; * <0.10

As expected, the working status presents the main marginal effect: working students have a lower probability to attend all or almost all the classes, particularly, for a full-time job student these probabilities decrease to 5.5 and 43.8 respectively; while a part-

time job reduces the full attendance to 26%. Students of the first year are more likely to attend all classes, while this probability decreases with the duration of the study: it is about 34% at the second year. Moreover, students after regular years presents a lower probability of regular attendance (about - 14%). The opinion of the student on classes usefulness is very significant: we introduce among the covariates the six statements of the question on classes usefulness and an indicator, ranging from 0 to 6, obtained as the sum of the values given to the statements responses (with values 1, 0.6, 0.2, 0 respectively for the responses 1, 2, 3, 4). The higher the indicator, the higher the probability of being a full attendant student (+3% for each point). Only the first two items, usefulness of the classes on discipline learning and on passing examinations, have a significant positive effect on the probability of being a full attendant student, that raises from 45% to 71% for an average student who agrees completely with both items. The University and course characteristics play an important role on the probability of attending classes. Taking a big private university as a reference, the probability of the average student to be a regular attendant increases by about 1.4% in a medium and by the 1.7% in a public university. The group of disciplines of the course is very relevant, this can be due both to the self-selection phenomenon and to the course organization. Medicine is the group where the average student has the highest probability of being a full attendant student (57%), while Law shows the lowest probability (9%). Other groups of disciplines where the probability of being a full attendant student is particularly low are Education (16%), Psychology (18%), Politics and Sociology (19%) and the Humanities (21%).

3. Concluding remarks

One of the problems of the Italian university system is that not all the students follow a regular career, so that the duration of the studies is longer than the nominal duration. This fact is due to some anomalies of the system and also to the fact that a lot of students are not full-time students. The preliminary analysis presented in this paper sheds some light on the student and course characteristics that influence the student propensity to attend classes, the most relevant being the working status and the discipline. We can better understand the phenomenon by means of a multilevel structural model (Muthén, 1994), that allow to take into account both student and course unobserved heterogeneity .

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