How long does it take to earn a higher education degree in Spain?

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References

- Gérard Lassibille and Mª Lucía Navarro Gómez **:** “How long does it take to earn a higher education degree in Spain?” *Research in Higher Education,* forthcoming, vol. 52, n°1.

Companion papers

- Gérard Lassibille and Mª Lucía Navarro Gómez: Tracking students’ progress through the Spanish university school sector. *Higher Education*, 2009, vol.58, n°6, pp. 821-839.

- Gérard Lassibille and Mª Lucía Navarro Gómez: Why do higher education students dropout? Evidence from Spain. *Education Economics*, 2008, vol.16, n°1, pp. 89-105.

Outline

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Objective

- Slow progress toward a degree has severe consequences for
  - the individuals involved
  - as well as for the society that finances most of the cost of service delivery.

- Having a better understanding of which students progress faster toward completion is thus important
  - in maximizing the use of resources allocated to education
  - and can help to develop strategies for reducing the time that students spend within the education sector.

- For these reasons, the economic and sociological literature has devoted numerous studies to students' graduation behavior and time-to-degree, see for example:
  - Booth and Satchell, 1995; Ehrenberg and Mavros, 1995; Löfgren and Ohlsson, 1999; Siegfried and Stock, 2001; Smith and Naylor, 2001; Xiao, 1997

- Due to the lack of appropriate data, there has been no such study for Spain.

- This article attempts to fill this information gap by analyzing the determinants of time-to-degree in a wide variety of higher education programs.

Institutional context

- Higher education in Spain offers three distinct tracks. Students may pursue:
  - Long-cycle programs offered by the conventional *facultades* (university faculties)
    - The university faculties account for a little more than 50 percent of the students in higher education.
    - University faculties are entitled to offer studies in all branches of knowledge with the exception of technologies.
    - The studies at university faculties last between four and six years, depending on the discipline and the university.
  - Long-cycle professional programs offered at the *escuelas técnicas superiores* (higher technical schools)
    - Fewer than 10 percent of students in higher education are enrolled in higher technical schools.
    - Five to six years of study are required to complete a degree.
  - Short-cycle degree programs offered at the *escuelas universitarias* (university schools).
    - University schools accounts for 40 percent of the students enrolled in higher education
    - The studies undertaken at these colleges last three years
    - The programs offer studies in all branches of knowledge [1]

Institutional context

- Most long and short programs are based on a credit system.
- There are no strict measures limiting the length of time in which students must complete their courses. In some cases, students are permitted to repeat up to six times in any given subject.
- Admission to faculties and higher technical schools is based on an entrance exam conducted by the higher education institutions themselves. Nearly all universities in the last few years have established admission quotas for a number of subject areas, using the entrance exam as the basis.
- Admission to short-cycle degree programs is generally much less selective. However, a system of preselection exists for entry into almost all short-cycle programs, with final selection determined on the basis of the results obtained on the entrance exam.
- Students with a vocational education degree may enter a university school without sitting for the entrance exam. Up to 30 percent of university school places are reserved for students holding a vocational secondary education.

Institutional context

- At the macro level very little information is available on the internal efficiency of the higher education system:
  - No systematic information is collected to follow the schooling career of higher education students
  - No information is available on dropout and repetition.
  - Precise information on the distribution of students by grade is lacking
  - The distribution of graduates by year of entry into the program is generally poorly documented.
- Incomplete and imperfect information suggests a low performance of the higher education system:
  - We estimate that one-third only of the students enrolled in the last year of a higher technical school program graduate, while two-thirds repeat or drop out.
  - In the faculty sector, the ratio graduates/students is around 11 percent, while with fixed cohort size this ratio would be roughly 25 percent

Table 1
The production of graduates by sector, Spain, 2003–2004 [a/]

	University schools	University faculties	Higher technical schools	Total
Graduates/students enrolled in last grade (%)	35.8	57.3	35.0	43.5
Graduates/total enrollment (%)	15.3	10.6	12.9	13.7
Time-to-degree [b/]				
Average time (years)	4.7	6.8	7.8	—
Graduates by years of graduation (%)				
Within the minimum degree time frame	38.2	26.6	18.7	31.0
One year more	20.4	21.7	22.3	21.2
Two years more	13.3	16.3	23.1	15.6
Three years and more	28.1	35.3	35.9	32.2

Sources: Ministerio de Educación y Ciencia (2006).
a. 2003–04 is the last year for which complete information is available
b. The data refer to various cohorts of freshmen who graduate during the same school year. The date of entry in the various higher education programs is missing for more than 20 percent of the 2003–04 graduates. We address the problem by distributing the missing values in proportion to time-to-degree; by doing so, we assume that the Registrar's Office has a greater probability of reporting a missing date of entry for cohorts of older students.

The data

- The data for our analysis come from:
  - administrative records maintained at the Registrar's Office of the University of Málaga
  - and data recorded at the Ministry of Education of the Autonomous Government of Andalusía. [1]
- Our data source is the full population of first-year entrants at the start of the academic year 1996—that is, 6991 students enrolled in 46 programs.
- These students were observed until June 2004, which means over a total of 8 full school years.
- From this database, we extract students who graduated within the eight-year window of observation and those who were still enrolled and had not achieved the degree by our last observation date.
- Our final sample consists of 3.764 observations. Of this total, 75 percent of the students earned a diploma; 25 percent did not experience the event of interest during the study period and are right censored.

- Our data set contains information about several variables that might be expected to affect time-to-degree. The control variables fall into two broad categories:

  - Preenrollment characteristics of the students:
    - Gender
    - Age at enrollment
    - Father's education level [1]
    - Student's score on the preuniversity exam
    - Whether a student has experienced discontinuity between secondary school completion and higher education enrollment [2]
    - Whether university school students enter into higher education with a vocational or a general secondary education diploma [3]

  - Enrollment variables representing information available after students have enrolled in a particular program:
    - Broad subject area of the higher education degree
    - Students' motivations and preferences for the program [4]
    - Labor market status of students [5]
    - Number of years in the program during which students receive grants [6]
    - Percentage of credits earned to credits attempted during the first year [7]
    - Student's grade-point average in year one [8]
    - Scale of the graduate program, measured by the number of first-year entrants at the beginning of the observation period [9]

Key results: Time to degree

- Overall, very few students are able to complete their degree within the minimum degree time frame.
    - 39% of students who earn a higher education diploma do so within the minimum degree time frame
    - 26% of graduates need one additional year to complete their degree
    - 35% require two additional years or more to graduate.

- However, this overall picture masks a great diversity across type of institutions and programs. To illustrate:

  – In university schools: 47% of degree recipients graduate within 3 years

  – In higher technical schools: 17% of graduates complete the requirements for a degree within the minimum degree time frame

  – Students in the university faculties perform better: 34% of degree recipients graduate within the intended period of time.
    - However, pronounced differences exist within the faculty sector. For example:
      – 27% of students in 5-year programs graduate within the minimum degree time frame
      – 61% of graduates in medical faculties complete the requirements for a degree within the minimum degree time frame.

Key results: Empirical model

- We estimate the determinants of time-to-degree by adjusting accelerated failure-time models for each type of higher education program [1]

- These models assume a linear relationship between the log of latent survival time *T* and characteristics *X*:

$$\ln(T) = \beta' X + z$$

where β is a vector of regression coefficients and *z* is an error term with density *f(.)* [2]

Key results: Correlates of time-to-degree

- Male students in 3- and 4-year programs take longer to earn a degree compared with their female counterparts. There is no evidence from our data of any significant gender effect in 5-year and 6-year programs.

- Age at enrollment is positively associated with slow progress toward the degree.

- Even though delaying entry to higher education is generally associated with socioeconomic constraints and academic marginality that may be detrimental to the student's chances of graduation, this pattern of enrollment does not significantly slow progress toward a degree, ceteris paribus.

- Preenrollment academic abilities are a powerful predictor of time-to-degree. All else remaining the same, an advantage of one standard deviation above the sample mean in the preuniversity exam score shortens the expected time-to-completion up to half a year, depending on the type of program [1]

Key results: Correlates of time-to-degree

- Graduate students who did not get into the course they wanted do not take significantly longer to finish than their counterparts, ceteris paribus. Otherwise stated, although current admission policies may create frustration and dissatisfaction among some individuals and may affect their chances of graduation, the mismatch between the final placement of students and their initial preferences does not seem to affect their motivation to finish quickly.

- Up to 30% of university school places are reserved for students holding a vocational secondary education. According to our results, entering with a secondary vocational education slows progress by about 0.8 year relative to the time required by students who enter with a secondary general education.

- Because working while attending school reduces the amount of time devoted to studying, it adversely affects student performance and slows degree progress significantly.

- Students who receive state grants finish faster than graduates who never receive financial support. Receiving support each year reduces the time-to-degree by about 0.5 year relative to the average time required by individuals who never receive a grant during their schooling career.

Key results: Correlates of time-to-degree

- Regarding academic performance at the end of year one of attendance, results show that:
  - graduates earning a higher GPA at the beginning of their schooling career take significantly less time to complete their degree
  - the percentage of credits earned to credits attempted is another significant contributor to time-to-degree. Graduates who earn more than 75 percent of the credits attempted during the first year of enrolment finish around two years earlier than those who earn less than 50 percent [1]
- With regard to the effect of program size on time-to-degree, our results indicate that university school students in larger programs take significantly longer to complete their degree requirements. The negative impact of program size may arise from the combined influences of:
  - differences in the tangible schooling environment, as reflected, for example, in a higher student-teacher ratio in larger programs;
  - differences in the effectiveness with which the available inputs are managed to promote student learning, as reflected, for example, by fewer personal interactions between students and teachers in larger programs.

Key results: Correlates of time-to-degree

- Finally, the results show that, after controlling for ability, preferences, socio-economic characteristics, performance at the beginning of the schooling career, and program size, significant differences do exist across subject areas. The remaining disparities in performance may be attributable to the specificities of the subject matter, which can be more or less difficult depending on the field of study.

Policy implications

- Several implications for the development of education policy arise from the foregoing results.

- The first is the need for continued efforts to promote faster progress toward a degree. In this regard, universities could design and develop graduation interventions for at-risk students; such targeted programs would benefit both the students and the institutions.

- One main implication from our results is that any academic support plan designed to reduce the time-to-degree of at-risk students should try to stimulate their effort and performance from the beginning of their schooling career.

- But equally relevant could be measures that encourage greater cost-consciousness among individuals and their families as they make educational choices at the higher education level, including greater cost sharing by students in public higher education, with appropriate features to minimize any adverse impact on those from low-income families.

Policy implications

- Policy makers could also consider administrative measures such as more systematic and tighter criteria for selecting the intake into higher education. In this regard, admission of students with a vocational educational diploma could be limited to students with good prior academic performance.

- Strict measures designed to limit the excessive length of time students are allowed to complete their courses should be considered too.

- These interventions could improve the system's performance. In the context of a meaningful expansion in the number of high school graduates, these interventions could also be one way to manage the increased pressures put on the higher education system.

THANK YOU