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EQUITY, ACCESS TO AND DEMOCRATIZATION OF HIGHER EDUCATION

REPORT OF CURRENT POLICIES IN PRACTICES IN SPAIN

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SUMMARY: THE SPANISH UNIVERSITY SYSTEM (SUS) COMPARED TO OTHER EUROPEAN COUNTRIES UNIVERSITY SYSTEMS

From the information gathered in this monograph for the international comparison of the Spanish University System, some conclusions show a great harmony between this and other systems in the European environment.

The effect of the opening and democratization of Education promoted by the University Reform of 1983 produced in Spain a high rate of the population having a higher education diploma (in the range of ages from 35 and 54 years old), above the OECD and EU-21 average. Also, this indicator places Spain above the EU-21 average. It even surpasses countries such as France, Germany and, by far, Italy.

When analyzing the demand for university studies in Spain, new students' profile does not present significant differences in the total enrollment of students. From an international perspective, the systems also show significant similarities: a predominance of women in demand for studies, which is nuanced depending on the field of Education or knowledge. With Germany's exception, all countries in the sample have a higher proportion of new female students and total female students. Among level 5A graduates, the percentage of women is even higher than that recorded in total enrollment. In Spain, 58% are graduates.

The distribution by educational fields in Spain is similar to the average distribution of the OECD and the EU-21. Almost a third of the demand is for studies in social sciences, business education, and law. In Spain, one in four students newly enrolled in 5A studies opts for Engineering or Science studies. The proportion that rises to 38% in men's case and drops to 7% by women. This last data is the worst recorded and the most significant difference between the selected countries' gender.

At the educational level 6, of advanced studies, the demand in Social Sciences is reduced. The application for STEM studies in Spain is similar to the rest of the European Union. Four out of ten students, level 6 in Spain, are enrolled in Science and Engineering programs. In Germany, this proportion rises to one in two. Higher participation of level 5A studies on the total defines a higher education system profile with a feature more marked by the degree and master's degree or equivalent. For example, it is the case in Spain and France, which have a ratio of 23 level 5A students for each level 6 student. At the same time, Germany and Switzerland have a rate of 10 and 9, respectively. The differences, which stand out for their magnitude among the systems analyzed, focus on aspects related to internationalization and financing, specifically regarding study aid and R & D expenditure. Even though almost 400 million people speak the Spanish language, the Spanish University System fails to attract international students significantly. Internationalization is one aspect in which the distance between the Spanish and other European systems is considerably higher. Only 2.8% of SUE students are considered international. This figure contrasts with 4% in Italy or 4.7% in Portugal.

However, the SUE is the primary sender and receiver of mobile students within the Erasmus program. According to the educational field, the flow of students entering and leaving the SUE through the program positively

in the Humanities and Arts and Social Sciences. In other areas, the number of Spanish students leaving is higher.

In the section on study aids, the low proportion of Spain's GDP dedicated to this concept stands out. Only 0.11% of GDP. Well below the OECD average (0.31%) and other countries with lower public prices, such as Germany (0.31%) or Sweden (0.49%).

In terms of resources devoted to research, the proportion of full-time researchers about the entire research staff in higher Education in the European Union is around 49%. The Netherlands stands out with 86%. It is in R&D expenditure in which the SUE presents more significant differences with the countries analyzed. From total R&D expenditure, the SUS concentrates 27.8%, a value very close to that of other countries, and 4.6 points above the EU-15 average.

However, when measured as the country's effort in terms of GDP, it only exceeds the percentage that Greece allocates to this end. The EU-15 average is 1.4 times the value that Spain devotes from its GDP to R&D in universities. In terms of the resources that each country devotes to higher Education, public and private, as a proportion of GDP, the Spanish indicator (1.3%) is slightly lower than the EU-21 average (1.4%) and countries around it such as Portugal (1.4%) and France (1.5%). This expenditure, standardized per student, places Spain at almost fourteen thousand euros per student per year, just above Italy and Portugal. Of the countries' selection, Switzerland has the highest annual expenditure per student: 1.7 times that of Spain. Depending on the type of investment, that corresponding to staff reaches 77% of current spending in Spain, ten points above the EU-21 and OECD averages. The indicator of higher education students per teacher in Spain is one of the lowest among the countries' sample. Twelve students per teacher, compared to eleven in Sweden and Germany. The European average is fifteen.

In terms of age, and compared to the group of countries, Spanish teachers are not mainly aged, if the comparison is with Italy, Sweden, or France. However, the highest proportion of teachers is in the range corresponding to those over 50 (39%). Finally, regarding the positioning of the SUE in the leading international rankings, it is observed that it is congruent with the magnitudes of the system in relative terms.

The performance of Spanish universities is in the range of the five hundred best universities in the world. It improves when it is value takes into account the year of creation of the institutions and when the ranking becomes more specific according to the fields of knowledge and the subjects. The SUE's position in scientific production is better than its size due to the economy's size, especially considering the low level of R & D expenditure compared to other higher education systems.

INTRODUCTION

The **LOVEDISTANCE** [1] project considers, within the work package #1, reports about "Equity, access to and democratization of higher education: Shared experiences in European countries".

But, why equity in Education is so important?

Actually, the real thing is not equality itself, but and its impact on society, fundamentally in the countries' economies and development. Some important aspects of equity on Education are:

- Equity in Education says that society should provide everyone the basic work skills to get a better job. It should prohibit discrimination based on gender, ethnic origin, or socioeconomic status.
- Equity in Education has two dimensions:
  - Fairness: meaning making sure that personal and social circumstances are not obstacles to achieving educational potential, or ethnic origin.
  - Inclusion: that ensures a basic minimum standard of Education for all.
- ·Both dimensions are closely related: reduce the school failure.

Equity should not be confused with equality. Equity gives each student what he or she needs to perform at an acceptable level. Equality gives each person the same. For example, every school district gets the same level of funding. It's better than discrimination, but it's not enough to provide equity.

THE HIGHER EDUCATION SYSTEM IN SPAIN

Higher Education in Spain is carried out by public and private Universities. The Ministry of Education and Culture administers educational courses of study at both public and private universities. Both public and private universities possess the right to award their own degrees following programs called institutional programs (**Títulos Propios**) not formally acknowledged by the ministry of Education. The ministry of Education establishes the academic standards, regulates the conferral of all degrees and academic titles, and additionally awards diplomas in the relatively small non-university sector of higher Education.

TIMELINE

Higher Education in Spain has its beginning in the middle ages. The University of Salamanca is the first University, established in 1218 in Spain. Spanish Universities have undergone some significant alterations that have contributed to a self-governing and decentralized system. In addition, Spain University system has embraced the guidelines of the European Higher Education Area (EHEA). University studies in Spain are maintained by Royal Decree 1393/2007 of 29 October, modified by Royal Decree 861/2010, of 2 July. And since

the adaptation of the EHEA, the university studies in Spain consists 3 cycles- bachelor, master, and doctoral level. The educational policy is regulated by the Ministry of Education along with the higher education departments in the universities. The University Council (Consejo de Universidades) indicates the prerequisites to build new universities, centers and institutes, and also helps in managing advanced graduate studies.

LAWS GOVERNING HIGHER EDUCATION IN SPAIN

The most important regulations related to Higher Education of Spain are:

- Law: Organic Law of Education Quality of 2002 (In Spanish: Ley Organica de Calidad de la Educacion, or LOCE)
- Law: Organic Law on Qualifications and Vocational Training, or LOCFP of 2002 (In Spanish: Ley Organica de las Cualificaciones y de la Formacion Profesional).
- Law: The General Organization of the Education System Act, or LOGSE of 1990 (Ley Organica de Ordenacion General del Sistema Educativo). Responsible for: All institutions
- Law: Universities Act of 2001 (Ley Organica de Universidades, or LOU). Responsible for: Universities.
- Law: Right to Education Act of 1985 (Ley Organica del Derecho a la Educacion, no. 8, or LODE) Year: 1985.
- Decree: Real Decreto 86/1987 of 16 January (BOE of 23 January) and Ministerial Order of 9 February 1987. Responsible for: Regulations for the recognition of foreign higher education qualifications

HIGHER EDUCATION FACTS AND FIGURES

The following is a summary of the Spanish university system in those most important aspects as a whole [4].

UNIVERSITIES AND CENTERS

The Spanish University System (SUS) was formed in 2019 by a total of 83 universities, 50 public and 33 private. There were 1,055 university centers between schools and faculties, 525 university research institutes, 50 doctoral schools, 54 university hospitals, and 77 foundations

THE UNIVERSITY STUDIES OFFER

In 2019, 2,920 Bachelor's degrees were taught, 2,159 in public universities. The Social and Legal Sciences presented the highest number of Degrees (1,046), 359 were offered in private universities, and 687 at public universities. On the other hand, with the least number of degrees taught, Science Studies, with 226 offered at public universities and 18 at private universities. Geographically Madrid, Catalonia, and Andalusia were the Autonomous Communities with a major offer. The number of Master's degrees in the 2019 academic year was

3,567, 2,761 were taught at public universities. The geographical distribution and branch of Education were similar to the distribution of Bachelor's degrees. The distribution by type of University of the Doctorate degrees taught regulated by RD 99/2011 varies from Bachelor and Master degrees. A total of 1,137 Doctorate degrees were taught, 293 belonging to the Social and Legal Sciences, 267 to Engineering and Architecture, and 233 to Science. Private universities offered a total of 94 degrees and had only 5.6% of students.

Higher Education in Spain is carried out by public and private Universities. The Ministry of Education and Culture administers educational courses of study at both public and private universities. Both public and private universities possess the right to award their degrees following programs called institutional programs (titulos propios) not formally acknowledged by the ministry of Education. The ministry of Education establishes the academic standards, regulates the conferral of all degrees and academic titles, and additionally awards diplomas in the relatively small non-university sector of higher Education.

AFFORDABILITY: PUBLIC PRICES

The average public price for the first-degree enrollment in the 2019 academic year decreased by more than 2.7% compared to the previous academic year. The degree of experimentality of the Undergraduate degrees made this average price vary from 14.0 € per credit for the minimum experimentality to 21.2 € per credit for the maximum. By autonomous community, the average price of credit in Bachelor's degrees ranged between 11.89 € in Galicia and 33.52 € in Catalonia.

Regarding the public prices by credit, of Master's degrees for the 2018-2019 academic year, it is necessary to differentiate between qualifying degrees, where the average price per credit stood at 23.6 € and non-qualifying degrees with an average price per credit of 32.4 €.

The average price of academic supervision to prepare the doctoral thesis decreased by 0.5% compared to the 2017-2018 academic year and was established at 254.2 €.

SCHOLARSHIPS AND STUDY GRANTS

The general call of the General Administration of the State, in the university field, for the academic year 2017-2018, awarded a total of 83 0,663.4 thousand euros.

SCHOLARSHIPS AND STUDY GRANTS OF THE GENERAL ADMINISTRATION OF THE STATE

For the year 2018, the budget executed in scholarships and study grants at the University and non-university level by the GAS was 1,525,699 thousand euros. This budget intended to cover the economic needs of the most disadvantaged. The general call for university students consists mainly of the payment of university fees, a fixed amount linked to family income, a fixed amount linked to the need for a change of residence, and a variable amount depending on family income and academic performance. In the 2017-2018 academic year,

at the university level, the GAS general call allocated a total of 259,794,137.1 euros to cover enrollment needs, 140,199,375 euros to offset family income below threshold one established in RD 26/2016, 125,999,250 euros to offset a change of residence and 300,220,496.9 euros for the variable amount. Of the total number of beneficiaries of the AGE general call, 37.9% belonged to threshold 1 (the lowest in family income), 58.4% to threshold 2, and 3.7% to threshold 3 (income) older relatives).

GENERAL SCHOLARSHIP OF THE GAS AND THE BASQUE COUNTRY

In the 2017-2018 academic year, 40.7% of the new students enrolled in Undergraduate studies received a scholarship in this call. After the first year, the loss rate for this scholarship was 34.8% for the 2016-2017 new entry cohort. The rate of return of the scholarship student population in Undergraduate studies was 87.7%, while in the non-student population, it did not reach 75%. The dropout indicator also presented better numbers for the scholarship population, 15.5% compared to 23.9% in the non-scholarship population.

SCHOLARSHIPS AND STUDY GRANTS FOR THE AUTONOMOUS COMMUNITIES AND UNIVERSITIES

The autonomous communities and universities granted a total of 245,010,270.8 euros for scholarships and study grants. In general, these scholarships try to cover the additional needs of the students or complement the aid granted by the GAS.

FINANCING AND SPENDING INDICATORS

The execution of the spending budget of public universities in 2017 amounted to 9,248 million euros, which is 3.97% more than the previous year.

FINANCING INDICATORS

If we analyze Spanish public universities' global income, in 2017, they reached € 9,415.9 M, which is 0.23% more than in 2016. Broken down by chapter, we find that resources have been focused mainly on non-financial operations, with an increase of 1.7% in current transfers. About current operations, the total amount was € 7,974.1M, which represented 84.7% of the total, a percentage similar to that of previous years.

The total for financial operations was € 56.6 million, 0.60% of total income, a slightly lower percentage than the previous year. The non-financial income per student increased by 0.81% compared to the previous year. The Valencian Community obtained the highest increase with € 1,212 per student more than in 2016.

Public funding per student varied between € 5,001 in Madrid's Community and € 8,957 in the Basque Country. The Community of Madrid loses € 725 per student compared to the previous year.

In 2017, the average contribution of the students for fees and tuition was € 1,352. From Spanish Autonomous Communities in which the economic effort of families was significant, the was Catalonia, with € 2,189 per student. At the other extreme is Andalusia, with € 773 per student, 43% below the average.

EXPENDITURE INDICATORS

The execution of the spending budget of public universities in 2017 amounted to approximately 9,248 million euros, which is 3.97% more than the previous year. The total amount of current operations reached 7,688 million euros, 83.1% of the spending budget. Spanish universities' economic structure was very similar: on average, 65.2% of expenses were for personnel, and 14% for goods and services effort was more significant was Catalonia, with € 2,189 per student. At the other extreme is Andalusia, with € 773 per student, 43% below the average.

PARTICIPATION: STUDENTS IN THE SPANISH UNIVERSITY SYSTEM

In the 2018-2019 academic year, approximately 7 out of 10 Health Sciences students were women, while they did not reach 3 out of 10 in Engineering and Architecture.

ENROLLMENT AND SCHOOL RATES

The total of enrolled in Spanish universities during 2019 was 1,595,039, the vast majority (81.1%) were undergraduate students. Non-face-to-face universities had 245,421 enrolled, which represents 15.4% of the total number of students.

The net enrollment rate in University Education, which measures the percentage of the population between 18 and 24 years old enrolled in Bachelor's or Master's studies, remains stable at around 31%. There is a remarkable difference in schooling rates between Autonomous Communities, partly produced by students' mobility between them.

GENDER

Of the students enrolled in the 2018-2019 academic year, 54.8% of the total were women, of which 55.2% enrolled in Bachelor's, 54.4% in Master, and 50.1% in Doctorate. The distribution by gender in the different branches of Education is still not very homogeneous. The most significant differences, both in those enrolled in the 2018-2019 academic year and graduates of the 2017-2018 academic year in undergraduate studies, were on the one hand in the Engineering and Architecture branch, where 75.2% of those enrolled and one 71.5% of the graduates were men and, on the other hand, in the Health Sciences branch, where there were only

29.7% of men enrolled and 29.2% among the graduates. These figures replicated to a greater or lesser extent in students enrolled for Master and Ph.D. studies.

STUDENTS IN DEGREE

Those enrolled in Degree increased 0.5% compared to the previous year. 74.4% of the new students were able to enroll in what they chose as the first pre-enrollment option.

INTERNAL MOBILITY OF GRADE STUDENTS

Compare to the 2018-2019 academic year, the Autonomous Communities where students carried out the University Entrance Examinations (PAU) remained finally enrolled (considering only face-to-face universities), the internal movements oscillate between La Rioja, where only 29.2% of the students stayed, to Madrid, where 78.6% did.

PRE-REGISTRATION IN DEGREE STUDIES

The adaptation rate in the 2018-2019 academic year for Undergraduate degrees was 74.4% (students who were able to enroll in their first option in the pre-registration process). This process is only mandatory in face-to-face public universities. The occupancy rate (places offered covered) varied between the branches of Education, from 101.5% in Health Sciences to 82.8% in Engineering and Architecture.

Regarding the preference rate (first-choice applications for each place offered), the Health Sciences branch stands out with 340.3% (more than three students for each place). At a global scope, the new enrollment and the offered places have remained stable throughout the last years, between the 2010-2011 and 2018-1019 academic years, varying by branch, while in Engineering and Architecture falls by 13.1%, new enrollment increases in Science by 11.8%. In the branches of Education and study areas, there were vast differences in terms of entry requirements. The areas of study with the highest average scores for admission were Science and Health Sciences.

ENROLLED AND GRADUATES

After several descent courses, the number of students enrolled in Bachelor's degrees increased slightly, reaching 1,293,892 enrolled in the 2018-2019 academic year, 84.6% in public universities.

The number of students who graduated in 2018 in Undergraduate studies was 198,568, representing a variation of -2.3% compared to the previous year. By study area and sex, the percentage of women who graduated in computer science did not reach 10% of the total, while in the Education area, it exceeded 70%. Considering age, students from face-to-face universities are on average under 25 and those from non-face-to-face ages 30 and over.

RELEVANT DEGREE INDICATORS

21.7% of new students in the 2015-2016 academic year they abandoned the chosen degree the first year (18.7% women and 25.1% men).

ACADEMIC PERFORMANCE RATE

Undergraduate students' performance rate in the 2017-018 academic year stood at 77.8%, reaching its minimum in the Engineering and architecture (67.5%) and its maximum in the Health Sciences branch (84.7%). The face-to-face universities obtained significantly higher performance rates than the non-face-to-face universities, both in public and private universities. In all cases, the performance in private universities was higher. As a significant fact, highlight the relationship observed between the admission grade and the rate of return.

DROPOUT AND CHANGE RATES

33.9% of the new students enrolled in undergraduate studies for the 2013-2014 academic year abandoned their studies, although, of these, 12.3% changed their degrees. In the face-to-face universities, 14.7% dropped out of the Spanish university system (SUS), a result obtained from the subtraction of 27.3% of total dropouts less than 12.6% who switched to another study within the SUS. Non-face-to-face universities show the highest dropout rates. 21.7% of the new students in the 2015-2016 academic year dropped out of the chosen Degree the first year, 18.7% in the case of women, and 25.1% in men's case. As a significant fact, again highlight the large variations between branches and an essential relationship of abandonment with the admission note.

SUITABILITY AND GRADUATION RATES

The 35.7% of the new students in the study in the 2014-2015 academic year completed their studies in the ideal time (suitability rate), and 48.6% of the new students in the 2013-2014 academic year ended with a maximum delay of one year (graduation rate). These values are noticeably lower in the branch of Engineering and Architecture and older for Health Sciences. Graduated Students The average grade of the graduates' file in Degree studies in the 2017-2018 academic year was 7.24. Only 25% of the graduates had a grade lower than 6.65. The average duration of 4-year degrees was 4.8 years, and for 5-year degrees, 5.7. The indicators referring to the graduates are the average mark of the record and the average duration.

MASTER AND PH.D. STUDENTS

Like past courses, the number of students enrolled in Master and Doctorate increased. The vast majority of PhD students were from public universities. The percentage of foreign registered PhD students reached 2 6.2%.

MASTER STUDENTS

In the 2018-2019 academic year, there were a total of 214,528 students enrolled in the Master. The growing trend was maintained, with the increase in the last five courses being 74.6%. The representation of private universities at this level of study was higher than that of the Degree, with a total of 78,711 enrolled compared to 135,817 in public universities in the 2018-2019 academic year. In the Social and Legal Sciences branch, there were a total of 39,447 graduates in public universities compared to 33,034 in private ones, while in the rest of the branches, the vast majority of graduates were from public universities. As in the Degree studies, women were more than half of those enrolled, the vast majority being in Health Sciences and not reaching one in three students in Engineering and Architecture.

DOCTORATE STUDENTS

For the 2018-2019 academic year, a total of 86,619 students enrolled in Doctoral studies, 94.4% in a public university. 26.9% of those enrolled in Doctorates were over 40 years old, with this age group being the only one in which there are more men than women. The highest concentration of young students in the field of Sciences stands out. The percentage of enrolled in foreign Doctorates reached 26.2%, is more than half of Latin America and the Caribbean.

DOCTORATES ACHIEVED

In 2017, 17,286 theses read, which was 13.8% less than the previous year. This decrease, after the increase in past years, was due to the extinction of doctorates regulated by regulations before RD 99/2011. Regarding foreigners who read the thesis in Spain, the area with the highest representation came from Latin America and the Caribbean, which accounted for 54.1% of foreigners, followed by the countries of the European Union with 26%.

INTERNATIONALIZATION

Foreign students with European and African nationality are enrolled mainly in undergraduate studies. On the contrary, students from American, Asian and Oceanian countries were mainly enrolled in Master and Doctorate.

FOREIGN STUDENTS

In the 2018-2019 academic year, 139,708 international students enrolled in the SUS, which represented 8.8% of the total of those enrolled, 26.2% of the Ph.D. students, and 5.4% of the Undergraduate students. While international students with European and African nationality enrolled mostly in Bachelor's degree studies, students from American, Asian, and Oceanian countries mostly enrolled in Master's and Doctorate. Both undergraduate and Master's degrees the number of international students continues its growth trend. The Autonomous Communities with the most significant international students were Madrid, Catalonia, and Valencia in Bachelor and Master studies. Madrid, Catalonia, and Andalusia in doctoral studies.

INTERNATIONAL STUDENTS

In the SUS, an international student is who has their ordinary residence outside of Spain and is either enrolled ordinarily in a face-to-face university or part of a mobility program destined for some SUE university. Of the 120,991 international students entering the SUE in the 2017-2018 academic year, 58,058 did so through mobility programs, and 62,933 did so with ordinary enrollment.

The countries with the most significant number of incoming international students were Italy, France, the United States, Germany, and Mexico. Madrid, Catalonia, and Andalusia were the autonomous communities with the highest number of incoming international students, with 30,350, 28,620, and 17,405 students.

OUTGOING INTERNATIONAL

Students Outgoing international students are those students enrolled in the SUS who leave outside Spain through a mobility program. In 2018, 42,002 international students were outgoing from the SUE through a mobility program in the 2017-2018 academic year, mostly with a young profile. 62.8% of Undergraduate students were between 18 and 21 years old and 82.7% of Master's students under 26 years old. The percentage of women among these students varied significantly according to the studies' level, being 62.0% for Bachelor and 38.0% for Master. The European destination countries with the highest number of outgoing international students were Italy, France, and the United Kingdom, with 7,306, 3,449, and 3,473 students.

PEOPLE IN THE SPANISH UNIVERSITY SYSTEM

The teaching and research staff, in the 2017-2018 academic year, stood at 122,910 people, 2.1% more than in the previous academic year.

TEACHING AND RESEARCH STAFF

In the 2017-2018 academic year, the teaching and research staff stood at 122,910 people, 2.1% more than in the previous academic year. Of these, 103,876 belonged to public universities and 19,034 to private universities. The teaching staff in full-time equivalent reached 83,094.8 teachers, 0.8% more than in the previous year. In its centers of public universities, 98,173 professors were reached, with 41% of women. As for the body of officials, the number of teachers stood at 42,819, with 35.9% being women. Regarding the six-year terms, 78.1% of the university teaching staff had at least one six-year term, and 45.8% had the optimal six-year terms since their thesis reading. In terms of age, the university faculty exceeded 54 years on average.

ADMINISTRATION AND SERVICES STAFF

In the 2017-2018 academic year, the administration and services staff stood at 61,908 people, 52,443 attached to public universities, and 9,465 to private universities. In full-time equivalency, they amounted to 60,438.0. 50,220 personnel were in public university centers, of which 32,373 belonged to the body of officials. Regarding the distribution by sex, the percentage of female civil servants stood at 67.9%, and hired women stood at 53%. The average age of them in public universities reached 49.9 years.

RESEARCH STAFF

The set of research staff employed and technical staff and research support, in the 2017-2018 academic year, reached 26,064 personnel, of whom 24,523 were in public universities and 1,521 in private universities. The research staff employed amounted to 19,190 contracted researchers, of which 63.4% came from competitive public calls. Regarding age, 74.7% of the research staff employed were under 35 years of age. In the distribution by sex, 46.6% were women.

OECD EDUCATION

Since the foundation, the Organization for Economic Co-operation and Development (OECD) was an international organization that worked to build better policies for better lives. Its goal is to shape policies that foster prosperity, equality, opportunity and well-being for all.

One of the topics followed by OECD is Education. Yearly, OECD publish the **Education at a Glance** report [2]. In this document, the referenced report is for year 2019. This periodic OCDE report is the authoritative source for information on the state of Education around the world. It provides data on the structure, finances and performance of education systems across OECD countries and a number of partner economies. The 2019 edition includes a focus on tertiary Education with new indicators on tertiary completion rates, doctoral graduates and their labor market outcomes, and on tertiary admission systems, as well as a dedicated chapter on the Sustainable Development Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all [3].

OECD INDICATORS DATA

Indicators	Subject
Indicator set A	The output of educational institutions and the impact of learning
Indicator A1	To what level have adults studied?
Indicator A2	Transition from Education to work: Where is today's youth?
Indicator A3	How does educational attainment affect participation in the labor market?
Indicator A4	What are the earnings advantages from Education?
Indicator A5	What are the financial incentives to invest in Education?
Indicator A6	How are social outcomes related to Education?
Indicator A7	To what extent do adults participate equally in Education and learning?
Indicator set B	Access to Education, participation and progress
Indicator B1	Who participates in Education?

Indicator B2	How do early childhood education systems differ around the world?
Indicator B3	Who is expected to graduate from upper secondary Education?
Indicator B4	Who is expected to enter tertiary Education?
Indicator B5	How many students complete tertiary Education?
Indicator B6	What is the profile of internationally mobile students?
Indicator B7	What are the characteristics and outcomes of doctoral graduates?
Indicator set C	Financial resources invested in Education
Indicator C1	How much is spent per student on educational institutions?
Indicator C2	What proportion of national wealth is spent on educational institutions?
Indicator C3	How much public and private investment in educational institutions is there?
Indicator C4	What is the total public spending on Education?
Indicator C5	How much do tertiary students pay and what public support do they receive?
Indicator C6	On what resources and services is education funding spent?
Indicator C7	Which factors influence teachers' salary cost?
Indicator set D	Teachers, the learning environment and the organization of schools
Indicator D1	How much time do students spend in the classroom?
Indicator D2	What is the student–teacher ratio and how big are classes?
Indicator D3	How much are teachers and school heads paid?
Indicator D4	How much time do teachers spend teaching?
Indicator D5	Who are the teachers?
Indicator D6	Who makes key decisions in education systems?

As macroeconomic figures, the Spanish University System also presents striking data. With a budget of 10 billion €, the University provides direct employment to more than 180,000 people and its economic impact represents 2.12% of the Spanish GDP.

According to the OECD Data, the main figures are related in table I.

Indicator	**Value**	**OEDC Av.**
Education spending	1.28%	
Mathematics Performance (PISA)	485	
Reading Performance (PISA)	485	
Science Performance (PISA)	485	
Youth not in employment, Education or training (NNEYT, 20-24 years old).	20.7	16.8

OECD EQUITY INDICATORS

According to the OECD [1], Spain achieved performance and equity indicators close to average OECD indicators since PISA 2015. Spanish upper secondary attainment rates remain below the OECD average, with increases in recent years, and tertiary attainment is close to the average. Early school leaving has declined significantly but remains prevalent. There is important variability in educational performance and early school leaving too. Meanwhile, the literacy and numeracy skills of Spanish adults are below the average of peer countries participating in the OECD Survey of Adult Skills, although Spain had one of the widest gaps between the literacy skills of older and younger adults, which speaks at least in part to significant improvements in the education system.

Even though the OECD data bank and its specialized indicators in Education, and, more specifically, those related to educational equity, should be a benchmark, and they are, in most cases, for Comparing the education systems of several countries, in our case, explicitly, the OECD warns of the imprecision of the data corresponding to Israel. This fact has led us to use other sources of information when preparing the report.

SOCIOECONOMIC ENVIRONMENT OF THE SPANISH UNIVERSITY SYSTEM

In 2018 Spanish CRUE Social Councils of Spanish Universities Conference to the most reputed institution in Spain, the study of human capital, an extensive work on the Socioeconomic Contribution of the Spanish University System [6].

This is not an indicators-based document, but responds, according to Spanish Universities' Chancellors, to a social demand about public spend transparency, and a demonstration of how Higher Education Expenses have a huge return, not only regarding job, but equality and social issues.

THE IMPACT OF OWN AND ASSOCIATED EXPENDITURE

The Spanish University System (SUE) comprises 84 universities that train more than 1.5 million students and carry out relevant research and transfer activity. To carry out their activities, the universities have more than 180,000 employees and a joint budget of 10,186 million euros, with which they purchase goods and contract services.

Their daily activities have essential impacts on the Spanish economy. Firstly, the Teaching sector represents a significant volume of outputs, income, and employment in Spain. Second, SUS universities spend their budget to buy goods or contract services from companies located mainly in Spain. Also, their students, their families, and those attending the organized events (conferences, scientific meetings, cultural events) make additional expenses due to the university activity, also demanding goods and services. In short, beyond their important, regular activity, the contribution of research of universities involves generating additional

expenses (demand additional in the local and regional economy) with significant economic impacts on the output, income, and employment of the companies that directly, indirectly and induced provide these goods and services.

During the last budget year, the expenditure made by SUE universities amounted to 10,186.5 million euros (9,205.2 million corresponding to public universities and 981.3 million to private universities), of which 9,867, 3 million euros are liable to generate an economic impact. Most of the expense corresponds to personnel expenses, current and operating expenses.

- The total expenditure made by the group of agents related to the SUE activity supposes an injection of demand in the Spanish economy of 15,990.6 million euros per year. The most critical direct injection of spending is attributable to spending by the universities themselves (9,867.3 million euros and 61.7% of total spending), followed by students (4,299.2 million and 26.9% of total spending), visitors to undergraduate and postgraduate students (1,534.7 million and 9.6% of spending) and finally those attending congresses (289.4 million, 1.8% of total spending).
- SUS own activity represents 9,867.3 million euros in * output *, 6,908.6 million euros in income, and 180,668 jobs, corresponding to its PDI and PAS staff at universities.
- The total impact (direct, indirect, and induced) on Spain's production and the income derived from the activity associated with the SUE is estimated, respectively, at an additional 39,803.9 and 17,798.6 million euros. In terms of employment, the impact amounts to 339,192 additional annual jobs.
- By agents, the most crucial impact is generated by spending on the SUS itself (23,785.5 million euros in production, 13,424.2 million euros in income and 207,723 jobs), followed by student spending (11,043.2 million euros of production, 3,047.8 million euros per annum of income and 87,999 additional annual jobs). On the other hand, visitors' expenditure generates 4,186.2 million euros of production impact, 1,115.6 million of impact on income, and 36,693 jobs. Finally, the congressmen's expenditure has relatively less significant economic impacts (789 million of production, 210.8 million euros of income, and 6,776 jobs).
- Globally, SUS activity impacts the production of 49,671.2 million euros, on an income of 24,707.1 million euros, and generates 519,860 jobs.
- The results indicate that each euro of spending on university activity would multiply its effect on total output by 3.1. Likewise, each euro of public spending destined to finance the SUE translates into an increase in the * output * of 8.3 euros. Similarly, every million euros of public spending in the SUE generates 87.1 jobs.
- The results indicate that in 2018 the estimated economic impact associated with SUE universities' existence represents 2.12% of GDP and 2.56% of total employment in Spain.
- The Education sector is the most benefited from it since it absorbs almost a third of the income generated (30.2%) and more than a third of the employment generated (37.7%) by the SUE activity.

- Sectors such as Real estate activities, Commerce and repair, Hospitality and Professional, scientific and technical activities also benefit significantly in terms of income. Together with Education, these sectors concentrate 67.2% of additional income generated by the SUE's existence.

  In terms of employment, the most benefited sectors are Education, Commerce and repair, Hospitality, Professional, scientific and technical activities and administrative activities, and auxiliary services. These five sectors concentrate 369,724 jobs, 71.1% of the total employment generated by the SUE activity.

- Monte Carlo simulations performed to contemplate the existence of uncertainty corroborates the results obtained in the previous estimates. Yearly impact on output is 45,636 to 67,449 million euros, on income, 23,632 to 29,445 million euros, and on employment, between 485 and 676 thousand jobs. These results indicate that SUS impacts on the economy in Spanish are presented even in the most adverse scenarios.

TALENTED PEOPLE AND DEVELOPMENT

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THE UNIVERSITY AS SOCIAL IMPROVEMENT

University education is an essential factor in individuals' social promotion: it favors their labor insertion, their professional career, their income levels, and protects them against the risk of poverty. However, it also has a very decisive intergenerational aspect, as access to university education largely depends on the parents' social origin and, especially, on their level of Education.

Let us try to answer four fundamental questions:

Is access to university training conditioned by the family background of individuals?

Do university students have better job opportunities than people with a lower level of Education?

To what extent does the University continue to contribute to intergenerational social progress?

What is the University's role as insurance against the risk of poverty?

Several variables influence this question. The professional status, type of occupation and activity sector of the parents, the level of family income, the size of the municipality of residence, the parents' employment status, or the sex of the individual all have significant effects. However, the parents' educational level, especially that of the mother, is the most determining factor for the educational success of the children, substantially increasing the probability that they will complete university studies. This effect is especially significant in the case of mothers with university studies.

On the other hand, the results confirm that university studies offer significant advantages in the workplace. Thus, people with university degrees are more likely to find employment and higher wages, but their jobs offer better characteristics in various relevant dimensions. The econometric analyzes carried out to confirm that university students are more likely to avoid temporary employment, have a full-time job, and, finally, be employed in a qualified occupation than people with a lower level of Education.

The analysis of intergenerational social mobility offers results that show the importance of higher Education as a mechanism for upward mobility, the effect associated with the passage from post-compulsory secondary studies to higher Education being especially relevant. Higher Education as a social promoter affects all individuals regardless of how favorable their social origin is, but it is especially significant precisely in the case of individuals with the less favorable social origin. On average, individuals of less favorable social origin with higher Education are in a better social situation than those of more favorable origin who do not have this type of training. The risk of worsening concerning the family stratum is also lower for the better educated.

Finally, the analysis results make it possible to verify that university education has acted as a buffer for many of the effects of the crisis among the most educated. University education helps protect against adverse shocks in the economy and is a safeguard mechanism against the risks of social exclusion and falling into poverty.

Education does not make inequality disappear, and indeed, the social and family origin continues to have a considerable influence on individuals' social status. However, the analysis carried out in this chapter points out that, with all the appropriate nuances, the Spanish University continues to maintain a significant role as a mechanism of mobility and social improvement for its graduates. Therefore, increasing equal opportunities in access to university training and efforts to improve the skills and employability associated with it are no less important now than in the past.

CULTURE, DEVELOPMENT, MORAL STANDARDS AND LIFESTYLE

The positive effects of university education are not limited to its visible economic effects at the individual level, such as higher wages and employability or a more fruitful career for university students. There are other relevant aspects for the well-being of people and society as a whole that are also promoted by university studies. University studies are associated with multiple positive effects in political and social participation, gender equality, health, care for the environment, and cultural development and participation.

University studies are associated with more intense social participation, higher percentages of electoral participation, a greater degree of associationism, more altruism, and more general confidence. They have higher support networks (social and family), favoring their values, attitudes, and behaviors the accumulation of social capital, a fundamental lever for developing democratic and cohesive societies.

Positive effects are also in the field of gender equality. University education substantially reduces gender inequality in terms of participation in the labor market and, although to a lesser extent, also contributes to mitigating it in terms of unemployment rates and wages. To these labor effects, its role must add a factor that favors an equal distribution of tasks in the home, promoting the dissemination of beliefs and attitudes more favorable to gender equality. University education does not eliminate gender inequality, but it does moderate its intensity.

In a relevant aspect such as health, a clear advantage, people with university studies have better health indicators: better self-perceived health status, lower percentage of people with chronic diseases or suffering from a degree of severe pain, lower incidence of severe limitations and injuries, less probability of suffering physical and mental illnesses, lower levels of obesity and overweight, and less consumption of medications, which indicates a lower presence of problems associated with health. In this way, people with higher educational levels seem to enjoy a higher level of competence to make use of medical information while developing more marked preferences for good health, either due to a better understanding of the long-term effects as pernicious habits or proper practices and habits (diet, exercise, regular medical checks) in health.

The data reflects a clear positive association between the possession of university studies and the protection and care of the environment. People with a higher level of training are better informed on environmental issues, show a greater interest and level of awareness for them, and are more willing to support policies in favor of environmental protection and collaborate in actions aimed at their defense. Finally, university students are active in enhancing responsible consumption and recycling habits more favorable to preserving the environment.

They have a clear advantage in all the cultural indicators considered: they spend more on cultural goods, show greater interest in a wide range of cultural activities, and have a higher degree of attendance at events. of that nature. Regarding time use patterns, reading is more established among university students, who also watch less television, use the computer more, and surf the Internet more for work or study reasons.

Finally, university students practice culture more actively, either by supporting cultural activities, attending courses, or practicing artistic activity as amateurs.

CONCLUSIONS

Among the conclusions provided by the experts, there is one that deserves to be especially highlighted, for being directly linked to the principle of equality of opportunities. That study confirms that university studies are a clear vector of social promotion because they increase the probability of accessing to more stable jobs, of higher quality and with better remuneration. It is furthermore, Higher Education has acted as insurance for university students against the effects of the crisis, setting themselves up as safety mechanism against the risks of social exclusion and falling into poverty.

In terms of fiscal profitability, the universities return, in taxes, 4.3 € for every euro invested by public administrations. Talking about "giving back" to society, there is a notable figure: in the last decade, the Scientific Production (in terms of publications, patents and research projects) of the Spanish University has continuously growing and accounting international prestige despite having suffered cuts of 10%, in competition with university systems whose budgets were increased up to 8%. The "strong resilience" of the research activity of the Spanish Universities can only be explained by the immense effort and sacrifice of the university community to prevent our country declining from research and development.

Not only are remarkable the economic aspects of the Spanish Universities, to educate critic and responsible citizens is one of the great missions of the University and, in this sense, it was very positive. University students are more altruistic and supportive —blood donations and contributions to NGOs— and keep more favorable attitudes towards Gender Equality, starting with the most equal distribution of domestic work. They are also better informed on environmental issues and show more awareness with sustainable consumption and recycling habits, without forgetting its greater interest in culture. Finally, they present better health indicators because they make better use of the medical information and maintain healthier life habits.

The University trains you on a professional and personal level. Is there where the pursuit of excellence in all are as it becomes a way of life. University values have been essential to grow as a Country and the economic and social miracle that Spain has lived cannot be understood without the contribution of the University. But many things have been done well, but others need to be undoubtedly improved. The decrease in the weight of the demand for engineering and science studies that represent in our country only 18.4% and 5.9%, respectively, compared to the average of 21.2% and 8.1% for the EU-28. We must increase our efforts to help awaken vocations in these areas from the early stages of schooling because these areas will be in the immediate future

the fastest growing in quality jobs. But about everything, because without enough engineers, mathematicians, physicists, chemicals ... we will stay out of Revolution 4.0 —As it happened to us in other times in our history— and we will be technologically dependent. The high rate of so-called **over qualification** continues to be the result of a highly educated youth in a productive fabric intensive in micro-SMEs that cannot betting on qualified employment; a business structure and the labor market that must be modified among all agents involved. Also worrying is the aging university teaching staff, where teachers aged between 60 and 67 years already exceed to the total of less than 35 years, fruit of the difficulties derived by the restrictions that the rate of replacement for public universities, together with some administrations reluctant to provide the University with the framework regulatory and financing that other countries do grant. Today, we have the best university system for our history. But not the best we can ever have. I can only thank and acknowledge the rigorous and comprehensive report made by the live team of researchers, who have freely analyzed data and figures to evaluate the significant contribution of our universities to the social and economic development of Spain.

QUALITY ASSESSMENT

As in preceding years, the Spanish University System Quality Observatory of the National Agency for Quality Assessment and Accreditation (ANECA) offers its report on the status of external quality assessment at Spanish universities. This report aims to provide a situation analysis of the repercussion of actions involving the external quality assessment in the Spanish university system and the progress made up to 2018 [6].

The Annual Report aims to inform the ministry responsible for universities and the various civil society actors of recent developments and results of the assessment, certification and accreditation processes leading to quality assurance in the sphere of university education in Spain, and, at the same time, to provide elements of analysis and reflection for some relevant issues in connection with all the above. The Standards and Guidelines for Quality Assurance in the European Higher Education Area, (ESG), is a fundamental instrument underpinning mutual trust within the European Higher Education Area (EHEA), even in the International context, have been fully adopted in Spain by universities and evaluation agencies, with the support of their leading stakeholders, to design and launch their main quality assurance and continuous improvement processes for an education model at the service of students and society. This report provides an analysis of the evolution up to 2018 of the principal external quality assurance processes in the Spanish university system. The study uses the contributions of various players, including student representatives, university stakeholder's councils, regional quality evaluation agencies, institutional agents, and national and international experts of renowned prestige.

QUALITY ENHANCEMENT OF UNIVERSITY PROGRAMS.

Quality assessment of recognized university degree programs focuses chiefly on factors such as learning outcomes of the programmers; periodic university programmer review procedures for their continuing enhancement; student assessment; teaching staff quality assurance; learning resources and student support; information systems; institutional procedures and policies leading to a culture of quality, etc. All these factors secure the necessary trust to enable mutual recognition among the different educational systems that coexist within the EHEA, 6 while offering safeguards to students and society about the quality of the mentioned learning programs. The general assessment process for recognized degree programs is working in the Spanish university system in several cumulative stages that, together, enable guidelines and pathways for the continuous improvement of said programs, and allow periodic accountability. The process opens with preliminary evaluations before ex-ante accreditation of degree programs. To date, some 9,500 proposals for new study programs have been evaluated as favorable for ex-ante accreditation, which has allowed the reconfiguration of a university system currently offering a wide array of degrees fully harmonized with EHEA guidelines. As for the authorization stage for a degree program, in some autonomous regions, such authorization is granted after the assessment of many aspects additional to those reviewed in the ex-ante accreditation stage. Within the 11 years studied, almost all of the proposals submitted for authorization have been evaluated favorably, which seems to indicate a very high correspondence between degrees assessed favorably in both processes, ex-ante accreditation and authorization, leading to accreditation and the inauguration of the new degree programs. Moreover, it is convenient to observe the balance between the availability of places in the new programs and actual student demand. This balance, that may be adequate for a large proportion of degrees and centers, is nevertheless inappropriate in other cases; this circumstance may impact negatively on the program rationale, planning, allocation of human resources and materials in the university system for achieving the goals set for each degree, etc. In short, this balance may affect both the use of resources and the quality of Education. Regarding occupancy rate results, marked differences can be observed depending on the branch of study, type of center, University, and autonomous region. Thus, for instance, the largest degrees per center ratio at public universities registered as 'active' with sustained low occupancy rates for students in the final academic terms are present in three autonomous regions, where at least one fifth of their degrees per center ratio had remained for three or more years at academic years 2014-15 to 2018-19 at occupancy levels below 50% of the available places. 7 It would be advisable, with the collaboration of all players involved, to consider the differences between regions, and indeed between universities and within each field of knowledge, in order to mitigate the more prominent imbalances that may be damaging to the quality of Education and the rational use of public resources that may be reassigned, precisely, to strengthening the quality of Education. To the evaluation activity before ex-ante accreditation and the authorization of degrees, we must add the assessment of numerous subsequent modifications to current degrees. Thus, of the total number of degrees currently registered as 'active' in the RUCT, around four-fifths of the bachelor programs have submitted modifications, half of the master's programs, and a fourth of the doctoral programs. Current legislation likewise foresees that, once a degree has been implemented and has been in effect for some time, it will be necessary to review the balance between the degree program design and its effective implementation and, as required, to correct any deficiencies observed; for this reason, a follow-up evaluation stage is envisaged before the accreditation renewal phase. In this process, each quality assurance agency applies criteria of its own, among

which differences can be observed, for instance, in the number and frequency of assessments, the scope of the dimensions assessed, etc. This leads to uneven follow-up coverage of implemented degrees from one region to another. Even so, for the Spanish university system as a whole the statistics for degree program follow-up coverage as compared with current RUCT figures published in the BOE after ex-ante accreditation are summarized as follows. Whereas four out of five bachelor degree programs are accompanied by an assessment report that corresponds to their follow-up, said coverage reaches less than three out of every five master's degrees and, in the case of doctoral programs, barely half, probably due in some cases to their more recent implementation. To close the cycle in the general quality assurance process for recognized university degrees, each program must periodically undergo ex-post assessment prior to accreditation renewal. Since the implementation of this procedure, some 5,000 degree programs have undergone assessment. More than half of these assessments have been conducted 8 on master's degrees and 46% on bachelor's degrees. However, the assessment of doctoral programs has hardly commenced yet, as it is still in its early stages. The 2,171 bachelor degrees and 2,580 master's degrees that, by the end of 2018, were favorably assessed for accreditation renewal represent 74% and 72%, respectively, of the programs taught in academic year 2018-19. Over and above the compulsory processes for the assessment of official degree programs, the International Quality Label (IQL) procedure offers the opportunity to obtain additional international recognition for certain degrees in Engineering, Computer Sciences and Chemistry. Such recognition is awarded through the labels EUR-ACE®, EURO-INF and Chemistry Quality Eurabel®, respectively. As of 2014, in the framework of the above-mentioned procedure, 229 proposals were received for assessment, of which practically two thirds were for the EUR-ACE mention for bachelor degrees. Of these, by the end of 2018, a total of 121 bachelor degree and 29 master's degree programs were issued an assessment report for the EUR-ACE® label, with a favorable outcome in the majority of cases. As regards assessment for the EURO-INF label, whose status remains unchanged since 2016, the number of proposals assessed favorably totals 17; all of these correspond to public universities.

QUALITY ENHANCEMENT IN HIGHER EDUCATION UNIVERSITY INSTITUTIONS.

The new institutional accreditation seeks to offer an alternative route to accreditation renewal for degree programs through compulsory quality assurance processes that are binding for all universities. This institutional accreditation stems from two fundamental processes on which universities and evaluation agencies have been working for several years. The first of these is the accreditation renewal process for recognized degrees, described above; the second is certification for the implementation of an internal quality assurance system (IQAS), to date mainly channeled through the AUDIT assessment procedure. In 2018, as a first, assessment reports have been available for these institutional accreditation processes. By the end of 2018, 32 centers at 7 universities had received a favorable institutional accreditation assessment. In more concrete 9 terms, at four of those universities, at least one third of their centers hold institutional accreditation, out of a total number of centers offering bachelor's or master's degree programs at which the University acts as degree coordinator. The Basque Country has taken the lead among the autonomous regions as all its universities, some very clearly, have already shown their determination to apply for institutional accreditation for their centers. Furthermore, in view of the general panorama of university centers not yet institutionally accredited but eligible

to apply for said accreditation pathway, 40 centers already hold a certificate of implementation for their IQAS and meet the requirement to ensure that at least one half of their established bachelor's and master's degrees have received accreditation renewal through the ordinary procedure. By contrast, despite meeting this requirement, 830 centers lack the certificate of implementation for their IQAS. In other words, of the total number of centers offering bachelor's or master's programs coordinated by the University, two out of three, despite having accreditation renewal for at least half of their established bachelor's or master's programs by the ordinary procedure, are unable to pass institutional accreditation assessment for failing to hold a certificate of implementation for their IQAS. This circumstance clearly identifies the chief focus for development in order to effectively move forward with institutional accreditation as an alternative pathway in degree accreditation. Precisely in relation to the above, assessment procedures for IQAS implementation certification, as in the case of AUDIT which has gathered experience over the last 11 years, generally seek to propitiate the proper implementation of IQAS by placing emphasis on educational review and enhancement at university centers, thus favoring the coherent integration of resources and actions relating to quality assurance in the Education provided, and to enable recognition of universities' IQAS by means of their certification. As a result of the assessments conducted in these procedures, for the moment, only 6% of the total number of centers offering official university degrees have obtained an IQAS implementation certificate. These centers belong to 18 universities. This percentage of the total number of centers, should they achieve a sufficient proportion of undergraduate and graduate degrees with accreditation 10 renewal, could opt for this new institutional accreditation method. Considering that nearly two fifths of these centers have already achieved such a sufficient proportion, only a narrow margin remains unless IQAS implementation certificates can be awarded to larger number of centers more rapidly. A further initiative interacting with those mentioned above is the DOCENTIA procedure for assessing teaching quality systems, whose fundamental aim is to support Spanish Higher Education institutions in designing in-house quality management mechanisms for ensuring the quality of university faculty activities and to encourage their development and recognition. After a track record of 11 years, 19 universities out of a total of 70 involved in the procedure achieved, by the end of 2018, the DOCENTIA certification.

IMPROVEMENT OF THE PROFESSIONAL QUALITY OF UNIVERSITY TEACHING AND RESEARCHING STAFF.

External quality assessment initiatives at Spanish universities have also focused on CV assessment processes for teaching and researching staff, in view of the enormous importance of the role played by these professionals in the enhancement of university life. These processes pursue two distinct main purposes. On the one hand, processes focused on the assurance of professional quality among candidates aspiring to teaching and researching posts at certain academic levels, whether as part of civil servant teaching bodies or under other contractual conditions; and, therefore, also on providing students and society with safeguards to this respect. And, on the other hand, attention is given to assessment processes for academic staff performance leading to the recognition of merit and, as applicable, the allowance of individual retribution complements throughout their professional university career. With regard to the first of these purposes, it is important to highlight that the quality assurance processes described herein, oriented toward the accreditation of contractual figures for teaching and researching faculty and for university teaching bodies alike, are being helpful, on the one hand, in identifying key issues with regard to professional paths in order to access to teaching and

researching staff career; and, on the other hand, in placing at universities' disposal a large number of candidates with extensive professional experience from among which 11 universities, exercising their autonomy and responsibility, may select the most appropriate staff for their teaching and researching vacancies. Without overlooking any of the principal features within the remit of university academic staff, especially teaching and research, the processes pursuing these purposes contribute to strengthening compliance with the ESG as regards academic staff professional solvency and, therefore, to sustain students' and society's trust in universities. Focusing on the evaluation processes for teaching and researching contractual figures, we can distinguish two types according to their validity and effects. On the one hand, certifications obtained through assessments conducted by ANECA facilitate access to selection processes convened by any Spanish university. On the other hand, those obtained through assessments conducted by a regional agency facilitate access only to selection processes convened by any university within that autonomous region. Between 2002 and 2018, close to 240,000 applications for assessment have been received at regional and national quality assurance agencies across Spain. In concrete terms, in the last year of the mentioned period 16,993 applications were submitted; over two thirds of these were for certification valid throughout Spain. Far from being unusual, individuals commonly submit applications simultaneously for both process types, national and regional, to secure greater chances of achieving the required accreditation for the contractual figure or figures they are applying for. For example, an estimated 23% of those assessed by ANECA between 2013 and 2017 for one or another figure also submitted an application for assessment to one or more other regional agencies. By virtue of their scope of competence, each quality assurance agency has established its own assessment model. Although coincidences occur among the different currently coexisting models in assigning a significant weight to researching and teaching functions, each different evaluation agency's mark can be discerned according to the importance given in each case to the various aspects of a given CV. Thus, even in the case of assessment leading to the accreditation of equal or equivalent contractual figures, differences among the different models are observed in the weighting given to the various aspects being evaluated. Therefore, for the same contractual figure, this circumstance may cause different assessment results 12 to be gathered from similar curricular merits depending on the evaluation agency in charge. This fact, in addition to unequal success rates arising from different agencies' evaluation results, may be an indirect cause for the simultaneous submission of several applications, a practice that results in the multiplication of public expenditure for the assessment of a single CV for a single contractual figure. There is no doubt that the above may be food for thought from the viewpoint that increasingly calls for rationalization, taking into account the drive to harmonize Spanish assessment systems and the efficient use of public resources nationwide. In the last decade, however, with these assessment procedures in use, a general tendency is appreciated causing the number of applications for assessment leading to nationwide certifications to increase sharply, while the number of applications with regional scope has dropped. Thus, while in 2008 the proportion of applications for assessment to obtain nationwide certification was just over 4/10 of the total, in recent years this proportion has reached over 7/10. Nevertheless, since 2016 an upturn in applications for regional certification has been experienced by regional evaluation agencies. As for the impact of these processes for contractual figures in the Spanish university system, it is worth noting that only around one fourth of the non-civil servant academic staff at public universities belongs to contractual figures requiring prior assessment by a quality assurance agency. For instance, whereas staff contracted from academic year 2015-16 to the present as PhD Lecturer or PhD Assistant Lecturer represent 6% and 19%, respectively, of the total non-civil servant academic staff, individuals contracted as Associate

Lecturer or Associate Lecturer in Health Sciences – contractual figures that do not require prior assessment by a quality assurance agency– account for 54% of the non-civil servant academic staff from 2014-15 to the last academic year analyzed. Hence, almost one third of academic staff hired at public universities in Spain belong to one of these two categories of associate lecturer, designed, according to legal provisions, for temporary and part-time contracts for specialists of renowned skill who have accredited their professional activity outside the academic scope of the University, for the purpose of teaching within their field of knowledge and conveying their professional experience to the University. This has led to Associate Lecturers 13 and Associate Lecturers in Health Sciences having become for many years the most numerous categories at Spanish public universities. These statistics invite a reflection on the –probably inappropriate– use of certain contractual figures at public universities, and also, in connection with the above, on the reduced effectiveness of assessment processes for accessing academic posts at these universities. In normative texts it is assumed that the figures PhD assistant Lecturer and PhD Lecturer –or their equivalent– are considered as the topmost contractual figures with regard to their role in the articulation of teaching and researching staff career at Spanish public universities, and the lead-up to participating in accreditation procedures for university teaching bodies or for regional contractual figures of a higher level. Although evaluation agencies, as a result of their assessment processes, have issued more than 143,000 positive reports over the last 16 years, and have therefore made available to the university system plenty of accreditations for accessing the contractual figures in question, no relevant change has been detected in recent years in the trend causing these contractual figures to take the top role ahead of other contractual figures such as Associate Lecturer. The cumulus of positive certifications in recent years, which is expected to increase further, and the scarcity of suitable employment opportunities for those involved, is having significant effects in the university system and, by extension, in other socioeconomic fields. Similarly, while the supply and demand of contractual figures for academic staff is in disarray, there is likewise a lack of correspondence with a further key element, namely developments in the student body and its distribution by branch of study. Finally, and in precise relation with the above, in view of the assessment processes valid nationwide, two conclusions stand out above others. The first is a visible gap between certain branches of study at the average age at which applicants achieve favorable assessment. The second conclusion is that the average age of applicants who are able to achieve favorable assessment has risen progressively over the past decade, most especially for the PhD assistant Lecturer figure in branches of study with the greatest delays for applicants to secure a contract. 14 In any event, it seems appropriate to reflect at this point on the effects that, within each branch of study, this type of assessment process may be having on reaching access to the various professional levels of academic staff. Asfor the assessment process leading to accreditation for access to university teaching bodies, developed in the framework of ANECA's ACADEMIA procedure, the aim is to place at universities' disposal a pool of candidates whose proven academic merits are sufficient to compete for posts as University Tenured Lecturer (TU) or University Professor (CU), from which public universities may freely select staff for these teaching bodies. Following the first stage in the procedure, during which approximately 40,000 applications were assessed, a second stage came into operation in 2016 in which, up to December 2018, over 4,000 applications were received; of these, nearly 9 out of 10 opted for the non-automatic procedure while the remainder opted for the automatic procedure. With regard to the trend in the number of applications by branch of study, in the new stage of the procedure the distribution of applications by branch of study differed slightly from the pattern observed in the previous stage. Thus, for instance, it was appreciated in the second stage as compared with the first that, in the case of TU posts,

applications for the Sciences, Engineering and Architecture gained relative weight, while this dropped particularly in the Arts and Humanities and in Social Sciences and Law. The latter, accounting for one third of applications, is still the branch attracting the largest volume of applications. In the case of CU posts, greater continuity is found with respect to the previous stage as regards percentage distribution of applications per branch of study; nonetheless, applications for Sciences increased their weight slightly in the overall number of applications received. These trends, however, are not reflected clearly in the composition per branch of study within the teaching and researching staff at Spanish public universities' teaching bodies, or in the progression in student numbers in each branch. By contrast, they seem to respond rather to the inconsistent number of people who, for many different reasons, aim for a professional career as academic staff. As far as assessment results are concerned in the second stage in the ACADEMIA procedure, the noteworthy feature here is that by the end of 2018 the great 15 majority of applications assessed to date have been favorable, especially in the case of applications submitted through the automatic procedure. However, with regard to the non-automatic procedure, assessment committees differ significantly in relation to the percentage of favorable assessment outcomes. Consequently, although all committees in the knowledge area of Sciences maintained favorable assessment percentages above 84% both for CU and TU posts, in the branches of Health Sciences, Social Sciences and Law, and Humanities only two of the eleven committees succeeded in reaching these percentages for success. The two last-mentioned areas of knowledge include the two TU and the five CU committees that have pronounced at least half of their assessments to be unfavorable. Besides, it is also important at this point to examine assessment outcomes from a gender perspective of applicants for accreditation in any teaching body. In sum, we can state that, on the one hand, despite the absence of any significant gender differences in assessment results, the unequal gender distribution favoring men in the applications observed from the outset determines that the highest proportion of accreditations for university teaching bodies are awarded to men. Therefore, an initial inequality therefore persists, for several reasons, in the overall group of individuals eligible to apply for posts offered by universities. Although accreditation and access to the system by younger generations of academic staff goes hand in hand with progressing toward gender balance in certain university faculty areas and branches of study, this advancement is still timid within the university teaching bodies referred to above and, in particular, that of University Professors. In the second purpose described earlier, relating to the assessment processes for academic staff performance leading to merit recognition and the allowance of individual retribution complements, it is already evident that said processes are promoted from national and regional administrative levels to strengthen certain aspects of academic work. Owing to its nationwide repercussion, it is of particular interest at this point to mention the assessment process for merit in research by the National Assessment Commission on Research Activity (CNEAI-ANECA). After a period of uninterrupted growth since 2015, the number of applications submitted decreased slightly in the 16 last year, despite which in 2018 over 7,000 applications were received at the ordinary call and 3,000 applications for the call by agreement. In this process, it is also significantly and persistently clear that gender differences exist, on similar lines to those described above for assessment processes of academic staff prior to accreditation; and that differences exist among scientific fields with regard to the number of tranches requested. For all the above, the existence of significant differences calls for in-depth analysis to discover the effects of academic staff CV assessment on a case-by-case basis, as global assessment activities may be having unequal profile-dependent impacts on the individuals undergoing these assessment processes.

TIC POLICY IN SPANISH UNIVERSITIES

UNIVERSITIC [7] is a publication that analyses ICT in Spanish Universities. It is a detailed compilation of the IT elements present on our university campuses and an analysis of good practices in IT administration. The central core of it, and its origin, is the analysis of the data provided annually by the universities themselves through the ITG (information technology government) web application. Therefore, the data correspond to the participating universities, not to the Spanish University System's total, although the high participation allows extrapolating the conclusions to the system. Besides, the UNIVERSITIC reports only account for official and centrally managed ICT. The data collected for the last edition was December 2016. Two-thirds of the consulted Spanish universities have participated in this edition (86% of public and 25% of private).

Although the number of participating universities has decreased (49 universities in 2017 compared to 61 in 2016), the percentage of Spanish university students is still very significant: 84% of university students. This fact is because most universities that have not participated in this edition and that did in the previous edition are small private universities. The indicators surveys' catalog contains two-level of indicators:

- IT Description Indicators, which allow us to obtain a detailed inventory of the IT implemented in our universities, from 5 different axes: teaching-learning, research, processes management, information management and training and IT culture.
- IT management indicators, which serve to analyze what are the good practices in IT management that are currently in operation in universities, from 6 points of view: IT resources, IT projects, IT services, management IT, quality, regulations, and IT standards and collaboration.

Universities' commitment to IT as support and support for teaching has reached saturation levels, with low growth rates in general terms and with high values in the indicators. As notable aspects, we have that the universities provide 90% of the ICT support services for teaching included in the catalog. Of these services, virtual teaching, the management of teaching software licenses, support for computer classrooms for teaching use, and support for freely accessible computer classrooms at all the universities participating in the report.

Indicators related to face-to-face teaching support IT infrastructure, the indicators remain, with 83% of teaching classrooms having an Internet connection for students and a multimedia projector. As times set, universities increasingly make less generic equipment available to students (about sixty thousand computers). However, they increase services to facilitate their laptops (almost twenty million Wi-Fi connections and a 13% increase in the catalog of virtual desktop applications for teaching practices).

We can no longer speak separately of IT services and infrastructures for face-to-face and nonface-to-face teaching, given the favorable evolution of face-to-face teaching with the constant use of educational technologies in the classroom. Even so, complementing the previous indicators, concerning the role of IT as promoters of virtual teaching, we can highlight that 77% of good practices are implemented or are doing so (out of the total of 21 good practices related to virtual teaching). The number of non-face-to-face degrees offered by the Spanish universities participating in the study has increased significantly (17%), reaching the figure of 484,

which is just over 7% of the degrees offered. Moreover, almost 85% of universities have considered, in an isolated or planned way, initiatives related to MOOC's adoption (Massive Open Online Course) courses.

IT needs for research are specific to the type of research developed. Therefore, the Research axis contains a few indicators. The total of researchers' curricula collected in the corporate databases of the Spanish universities participating in this study stands at 71,536 (78% of the PDI). There are 1,274 videoconference rooms that facilitate researchers' face-to-face meetings. Universities centrally manage two-thirds of the possible IT research support services reflected in the catalog, the most used being physical accommodation in the CPD of servers dedicated to research (88%) and advice for the acquisition of technology and its implementation ICT services oriented to research (69%).

The necessary tools for implementing electronic administration in the universities are already fully consolidated and steadily progressing in interoperability issues. Three-quarters of the total of 64 ICT support services for university management proposed by the UNIVERSITIC catalog have a specific computer application. There have about 44% of the applications in the General State Administration catalog of shared solutions implemented. Specifically, the SARA Network (The SARA Network is a technological system that allows all Spanish and European public administrations to share any information between them securely.) is present in nine out of ten universities participating in the study. Each University interoperates with an average of more than 14 entities to exchange official information.

Institutional knowledge management, in a suitable and public electronic format, continues to advance in universities. There has been considerable growth in transparency and open data issues: nine out of ten universities have a transparency portal, and the number of published data catalogs continues to increase, reaching an average of 13 per University. On average, universities use more than five different media to communicate with their public, with distribution lists, publications on social networks, and corporate agendas by practically all institutions.

About the effort dedicated to increasing the university community's level of IT-related competencies (students, teaching, and administrative people), a slight improvement about the year 2016 campaign. Although 33% of training courses in the field of IT taught at universities, in this edition, these courses have had a greater scope: 10% of students, 22% of teaching people, and 37% of administration workers have received IT training in the last year. From the detailed analysis of the indicators in the field of IT Management collected in Chapter 3, we highlight the following results: • In this campaign, compared to 2016, universities, in general, have regressed in the implementation of good practices They could help plan and properly size IT investments and expenses, except the improvements experienced in some budget items. Unfortunately, 3 out of 4 universities lack an IT-related human resources allocation and distribution plan regularly updated. Furthermore, the last year in which universities made a significant change in the IT service job ratio (RPT) was, on average, 2009, a considerable time considering what has changed the university world's reality. Fundamentally as a consequence of the rapid evolution of information technologies and the digital world. Worse is to note that the decreasing trend of the budget for technicians' specialized training continues (133 euros for each IT technician). We should keep in mind that we are still subject to a budget restriction by law, both in hiring personnel and in investments.

The situation regarding the existence of its own and differentiated budget for IT continues, although external financing worsens. 91% of universities have their own and differentiated budget for IT, although only 27% have analytical accounting of these services of known cost. An average of 3.48% of the total budget is on IT. The universities raised an average of 96,000 euros through external financing, suffering a considerable drop compared to the previous year (a 42% decrease in the participating universities in the last two editions).

The percentage of universities that have defined and published the procedure followed to evaluate and prioritize the order of execution of IT projects increases slightly again. In 59% of universities, IT projects are prioritized and approved by the government team, in 30% of cases, they depend solely on the discretion of the competent Vice-Rector, and in the rest, the decision rests with the management of the IT area. This aspect is downgraded to the previous campaign since the data shows that IT planning in 2017 falls more to the hands of the corresponding ViceRector's Office at the cost of less intervention by the government team, thus slowing down the pace IT objectives with those set in the strategic planning of the University itself.

The universities' interest in security aspects and the indicators linked to the National Security Scheme (ENS), currently mandatory, is noteworthy. Universities declare that they achieve, on average, a low maturity index in their compliance (39 on a scale of 0 to 100), it continues a favorable evolution with an increase of 15% compared to the previous year. The progression in the percentage of universities that have defined the figures of responsibility in the ENS's different areas reinforces this effort: 74% have been having the role of Head of Information, 78% the Head of Services, and 80% the Head of Security.

The indicators related to IT management have hardly changed. In this edition, there are no changes in the percentage of universities that declare having a strategic plan for IT aligned with their general strategy or the IT area management's presence in its elaboration. As a positive, the trend in the number of performances outside the institutional channel, which has dropped by 6%. On the contrary, the percentage of the universities in which the highest IT manager is a member of their government team has decreased, with the figure of the IT Vice-chancellor being the most common formula.

Almost all universities have more than two years of experience in official quality plans. The measurement of user satisfaction with IT-based services is still not widespread, although the evaluation of services is present in half of the participating universities. 70% of participating universities perform external audits of IT regulatory compliance, representing 7% over the previous year. Internal control of regulatory compliance is a task that Spanish universities are tackling, reflecting an increase of 13% among the universities participating in the comparison.

As in the 2016 study, this year, participation in IT experience exchange events has increased. The plenary sessions of the Crue-TIC sector, with 98% participation, and the activities of organized REDIRIS are the meetings with the highest participation. However, participation in international forums remains testimonial, except in the ITSMF, which is attended by 40% of Spanish universities. On the other hand, the collaboration of those responsible for institutional IT with the research groups of their University is practically non-existent since they participate in only 7% of IT projects.

UNIVERSITIC is an eminently quantitative report, with many tables and graphs, increasingly complemented by strategic reflections, thematic analysis, and prospects. On this occasion, we analyze the key issues and IT expectations of Spanish universities for 2017 under the prism of importance and urgency. Although the universities are digitally transforming their learning methodologies, their main concern is the security of the information. Thus, a review they are working on of different aspects related to information security: The National Security Scheme, the data related to security collected in this report, the different roles and responsibilities, and the evaluation criteria.

In conclusion, we can say that it is essential to approach a comprehensive approach to information security and understand it as a differentiated function of the person responsible for information systems. There is also a comprehensive and detailed review of the universities' commitment to IT governance, the new role of the CIO, the optimal management of financial and personal resources, and the need to redesign the IT support structure in the universities.

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