Developing a European Framework of Harmonized Quality Indicators for HEIs' Internal Management System

IO1.A1 – State of the Art of the Quality Management System of HEIs

- Clustering Document -

UA Partner

19th February 2021

Co-funded by the Erasmus+ Programme of the European Union

1. Introduction

Higher education quality management systems (QMS) are often criticised for being too-process oriented, box-ticking and insufficiently focused on consequential and generalizable outcomes. One of the reasons underlying these critics relies on the fact that QMS tend to rely on a large quantity of quality indicators, which makes their accuracy and timely analysis difficult, and consequently undermine their adequate use for decision-making at different levels (strategic, tactical, or operational).

In this context, the main objective of the SMART-QUAL project is to support higher education institutions (HEIs) in the implementation of effective internal QMS, by designing a set of quality indicators to support them. The indicators will be aligned in a structured catalogue according to the three main levels of decision making (strategic, tactical, and operational).

The quality indicators to be designed are meant to be applied by the institutions within their QMS and, as such, contribute to improve in the short and long term these systems (making them more efficient and effective).

In order to arrive at the planned structured catalogue of quality indicators, the SMART-QUAL project intends, in a first phase, to develop a *Quality Indicators Scoreboard and a Smart-Qual Wiki (**IO1**)*. Step 1 of this first phase was the establishment of the state of the art of the QMS of higher education institutions across Europe (***IO1.A1*** *- State of the art of the quality management system of higher education institutions*). To do so, information was gathered on the current situation of QMS in 36 HEIs spread over 5 European countries (Portugal, Spain, Belgium, Lithuania and Italy), with particular emphasis being given to the quality indicators used in these systems. A template was designed to frame the data collection, which was then used by all the SMART-QUAL partners in their empirical work. This work included desk research (analysis of different institutional documents, such as quality manuals, strategic plans and activities plans, as well as the institutions' websites), combined with formal and informal contacts with the institutions included in the sample.

The present clustering document constitutes the main output of IO1.A1 and provides an overview of the QMS found in the 36 analysed institutions. The document summarises the set of quality indicators identified by the partners, which were considered as the most relevant to characterise the studied QMS, while also being the most useful for the SMART-QUAL goal of developing a catalogue of quality indicators. The indicators will be presented according to the main institutional processes they refer to (teaching & learning, research, and relations with society), and will be classified in strategic, tactical, and operational, in line with the decision-making level they address. How far the set of indicators cover the ESG standards

(2015) (combined with some others used in the Portuguese quality assurance system) was also object of analysis, since the ESG are the European reference for the implementation of QMS in higher education institutions across Europe.

This document is supplemented by an *excel file* containing all the information collected about the QMS of the 36 institutions comprised in the sample (sheet 1 – HEI), including a list of all the quality indicators identified and their main characteristics (sheet 2 – Indicators).

2. The Institutions and their Quality Management Systems

36 higher education institutions from 5 different countries (Belgium, Italy, Spain, Portugal and Lithuania) were included in the sample (Figure 1). As already referred their QMS were analysed, with relevance being given to the set of quality indicators considered to be most relevant for the effectiveness of such systems.

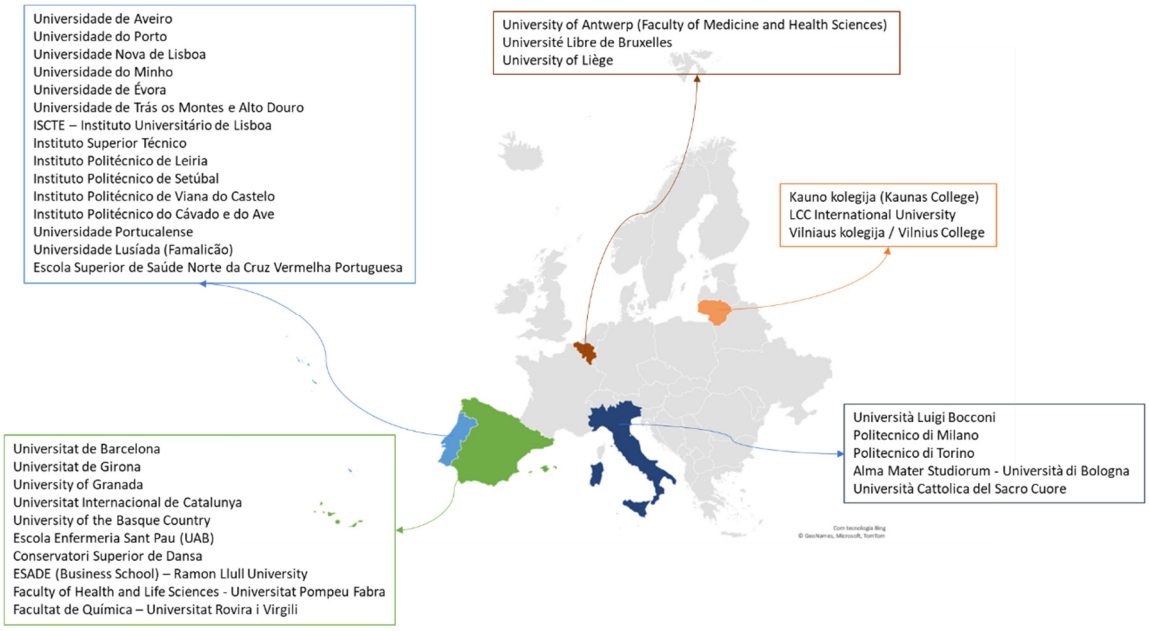

Figure 1 – SMART-QUAL sample of higher education institutions

Overall, the sample is made of 21 universities, 4 polytechnic institutes, 2 universities of applied sciences, 7 schools and 2 colleges. While 27 are public HEIs, 9 are private ones. Regarding their size, the sample comprises rather small institutions, with less than 5000 students (12 HEIs), medium sized ones, with a number of students ranging from 5000 to 15000 (12HEIs), as well as large institutions, with a number of

students that goes well beyond the 20000 students (12 HEIs). 12 of the institutions have only one campus, while 24 of them are located at multi-campus. Furthermore, most of the HEIs are comprehensive (24) with only 8 having a specific character. Finally, while 20 are located in metropolitan cities (Milan, Barcelona, Lisbon, Vilnius and Brussels), 16 are placed in regional cities.

The reasons for the selection of these institutions/QMS are varied, ranging from the characteristics of the institutions themselves (e.g. history, dimension, representativeness and relevance within the national higher education systems, good positions in international rankings, reputation), to the easiness of contact with relevant people within the institution (augmenting the possibility of collecting reliable and valid information on the QMS), the availability of public information on the QMS, including when searching the institutional website (e.g. on the process and the role played by each body, in a transparent way), the existence of well-structured and integrated governance and management systems, interested in promoting the quality of the nuclear processes and their results, ensuring the involvement of all stakeholders, or the maturity level of the QMS. Regarding this last reason, several sub-reasons are provided namely:

- the institution's QMS is audited and certified by the national/regional quality assurance agency (main reason in the case of all but one Portuguese institutions and in two Spanish institutions). In particular, and for the case of five Portuguese HEIs it is referred that "IQAS certification also evidences the alignment with a specific set of references/guidelines externally put forward by the A3ES which, in turn, are adapted from ESG 2015. It is possible, therefore, to assume that this IQAS uses key indicators related to the European standards and, therefore, includes best practices related to the management of these indicators";
- the QMS presents different strengths, such as: i) a very complete procedure to monitor the student learning progression, including satisfaction surveys about issues related to the student learning process; ii) the use of external references like rankings and international guides to measure the evolution in the internationalisation of the study programmes; iii) an accurate process for study programmes design and follow up; iv) concerns with student support and guidance; v) a linkage between research and teaching and learning;
- in the case of the Italian institutions, relevance has been given to QMS relying on the definition, regular analysis and use of quality indicators as the basis for the development of corrective actions and new goals. In two of the institutions these indicators are the ones made available nationally by the ANVUR, while in others they have been designed to address the HEIs three nuclear processes as well as other important aspects of these organisations (e.g. innovation, dissemination, sustainability);

- the internalisation of a quality culture in the government and management of the institution;
- the institution's QMS is implemented and certified according to the ISO 9001:2015 standard;
- the institutions' quality manual, strategic plan or activities plan present a comprehensive set of quality indicators that are quite interesting and useful to adequately monitor the quality of the three nuclear processes;

In all the analysed institutions the QMS address the nuclear process of *teaching and learning*. As for the *research* nuclear process, it is included in the QMS of 30 institutions, while *relations with society* is covered in the QMS of 29 institutions. 13 institutions refer to have other processes addressed by their QMS, namely processes related to the overall *governance and management* of the institution (e.g. strategic processes; directional plan; management; planning, evaluation and improvement), the management of different *support processes* (resources; information and advertising; human resources; innovation; finances; buildings and safety; environmental sustainability; information and communication systems and infrastructures; technical-juridical; distance learning; services and cultural units; project management). Internationalization is also a process referred as being covered by some institutions QMS.

All the selected institutions have QMS with a sound maturity level, although not all of them have been certified by an external agency. In Belgium, such certification has not occurred in the 3 universities analysed, but in all of them the study programmes have been certified according to the ESG and research is also subject to review processes. In Italy all the institutions have been accredited by ANVUR (Italian National Agency for the Evaluation of Universities and research Institutes), which includes an external assessment of their quality assurance systems. In Portugal, all but one institution have their QMS certified by the Portuguese quality assurance agency (A3ES); the institution that doesn't have this certification, has its QMS certified according to the ISO 9001:2015 standard. In the Lithuanian case the assessment of the QMS is part of the institutional or study programmes evaluation/accreditation; as such, although the QMS have not been formally certified, they have been externally reviewed. As for the Spanish institutions, the situation is somewhat more diverse, but the same rational applies: some institutions have their QMS certified by an external agency (4 HEIs) while in the others the QMS is externally assessed under the study programmes accreditation system. Furthermore, in one HEI the system has been externally assessed according to the EFQM model (2003-2006) and the ISO 9001 standard (2006-2009) and since 2010 the institution has implemented its Integrated System of Service Quality Management. Two institutions have systems that have not been certified nor follow any international standard or quality model, but rather a self-developed model based in key-performance indicators for several dimensions.

3. Quality Indicators

In this section of this clustering document an overview is provided of the most relevant and useful quality indicators identified in the sampled HEIs vis a vis the scope of the SMART-QUAL project – creation of a catalogue of quality indicators. For each HEI/QMS six quality indicators addressing the three institutional nuclear processes have been identified along with some of their characteristics:

- Name
- Description
- Nature (qualitative/quantitative)
- Process addressed
- Decision-making level (strategic / tactical / operational)
- Target defined? (Yes/No)
- Used or not for decision-making and how
- Time of use (number of years from its first use)
- Use for external quality assurance processes
- Standard addressed (from a list of the ESG standards combined with those existent in the Portuguese quality assurance system)

3.1 Brief overview

Overall, 223 quality indicators have been identified in the 36 QMS analysed (see the *excel file* – sheet 2 – Indicators for an account of all these indicators characteristics). The main characteristics of these 223 quality indicators can be summarised as follows:

- ✓ **201** are **quantitative** indicators while **22** are **qualitative** indicators
- ✓ Processes covered[1]:
  - **85** - **teaching & learning** | **63** - **research** | **60** - **relations with society**
  - **2** - **teaching & learning and research** | **1** - **research and relations with society**
  - **3** - **teaching & learning and relations with society**
  - **2** - **teaching & learning and research and relations with society**
- ✓ Decision-making level[2]

[1] Two indicators have been referred as covering the internationalisation process, while 3 were identified as addressing the management process.
[2] For 13 quality indicators there was no information regarding the decision-making level addressed by it.

- **117 - strategic | 31 - tactical | 30 - operational**
- **8 - strategic & operational | 1 - strategic & tactical | 6 - tactical & operational**
- **17 - strategic & operational & tactical**

3.2 Coverage of the ESG + A3ES standards

In 2015, the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) were revised (first version in 2005) and approved. Part 1 of the ESG comprehends a set of standards and guidelines for the design and implementation of internal quality assurance systems. Although not being mandatory or prescriptive, these standards and guidelines are widely used by HEIs in the European Higher Education Area (EHEA) when implementing their QMS, which guarantees that these systems adhere to a certain extent to the same set of principles and that the processes and procedures implemented are modelled to fit the purposes and requirements of their contexts.

The sampled QMS have been analysed regarding their degree of coverage of the ESG. As a matter of fact, the ESG were complemented with other standards in use in the Portuguese quality assurance system for auditing and certifying QMS (*Reference Framework for Internal Quality Assurance Systems in Portuguese Higher Education Institutions*). The rationale behind this combination of the ESG and the A3ES standards lies in the fact that the A3ES standards not only cover the ESG but also include standards meant to cover more institutional processes besides teaching and learning. In fact, they include standards to address research, relations with society and internationalisation, which are of especial relevance for the SMART-QUAL project. As such, each indicator was analysed to see how far it covered the set of ESG + A3ES standards identified. Table 1 presents a summary of the number of indicators covering each one of these standards. Its analysis allows to conclude that the sampled QMS cover all the standards with a special emphasis to the ones related to Teaching & Learning (2.1 to 2.4); Research (2.5) and Relations with Society (2.6). Obviously, this result was expected since the goal was to identify quality indicators that specifically address these processes.

Table 1 – Number of indicators covering each one of the identified standards resulting from a combination between the ESG standards and those in use in the Portuguese quality assurance system.

Standard	N.º of quality indicators addressing the standard (out of 223)
1.1 Policy for quality assurance and pursuit of quality objectives	17
2.1 Design and approval of programmes	24
2.2 Student-centred learning, teaching and assessment	43
2.3 Student admission, progression, recognition, and certification	40
2.4 Ongoing monitoring and periodic review of programmes	38
2.5 Research and development / targeted research and high-level professional development	71
2.6 External relations	60
2.7 Internationalisation	27
3.1 Human resources	12
3.2 Material resources and services	8
4.1 Information management	54
4.2 Public information	14
5.1 Cyclical external quality assurance	10
5.2 Cyclical internal monitoring, evaluation and continuous improvement of the QMS.	20

3.3 A possible list of relevant quality indicators for the three higher education main processes

In this subsection the most relevant quality indicators identified for the SMART-QUAL project are presented, organised by nuclear process. As some of the 223 indicators identified in the sampled QMS are rather similar (or even repeated) this list is shorter (for the complete list of quality indicators please consult the *excel file* – sheet 2 – Indicators).

Table 2 presents the indicators for Teaching & Learning and it is worth noticing that the indicators reflect the different stages of this process: access to study programs (including the quality of this access); overall satisfaction with the programs; outputs and outcomes.

Table 2 – Quality Indicators for Teaching and Learning

Name	Description
Student dropout	Ratio between the number of students dropping out in a selected school year (t) and the number of students enrolled in the previous school year (t-1)
Students who completed the degree, by final grade and completion time	Total number of students who meet the legally required conditions for the issuance of the diploma, regardless of whether or not they requested it, in a given academic year (until December 31, following the end of that academic year)
Student satisfaction index with the degree	Σ of answers Satisfied + Very satisfied + Totally satisfied with the the degree / Number of responses in all items that make up the scale
Graduation rate (in n years)	Number of graduates in n years / Number of students 1st year 1st time X years before (2 years for CTeSP and MSc degrees, 3 or 4 years for undergraduate degrees)
Degree employability rate	Official information on the infocursos portal (supplemented with a survey conducted to IPVC's graduates 18 months after the completion of their degree)
Degree dropout rate	Number of students who cancelled their registration + No. of students who did not renew their registration for the following year / Nº of students enrolled in the degree) * 100
Demand satisfaction index / strength index (1st phase)	Number of candidates in 1st option of the 1st cycle / Number of vacancies in the 1st cycle * 100
Completion rate	Number of graduated students / Number of students enrolled in the last curricular year (1st cycle) * 100 or Number of students enrolled in the course dissertation / project / thesis (2nd and 3rd cycles) * 100
% of teachers highly rated by students	Percentage of teachers with an average score higher than 6 in at least one of the teaching dimensions in the pedagogical surveys in the academic year n-1 / n, referring to the situation on December 31 of year n
% of graduates who obtain a diploma in the normal length of the study cycle	% 1st cycle graduates and Integrated MsC, Integrated MsC and 2nd cycle graduates who obtain a diploma in the normal duration of the study cycle
Education improvement plan actions	Actions defined in the improvement plans prepared by the Pedagogical Councils
Academic achievement	Approved / Evaluated
Foreign students enrolled in a degree	Number of foreign students enrolled in a degree / total number of students
Student dropout	Number of cancellations of registration 1º Cycle - Integrated MSc / total number of 1º Cycle - Integrated MSc students
Percentage of Teaching Guides published before 15th June	Subjects Guides published
Number of complaints, suggestions and congratulations received on public information	Complaints, suggestions send in by different groups of interest
Ratio of students per professional tutor in clinical internship	Number student per professional tutors

Level of satisfaction with facilities and other resources	Result of satisfaction survey
Recognised subjects on the total number of registered assignments	% subjects recognised according to professional experience
% of international invited teachers and professionals	Number of international teachers and professionals (with research /teaching /professional experience in different countries)/ total number of teachers and professionals
Student Satisfaction Teaching Performance: Average	Student satisfaction of different items related to teachers performance
Student satisfaction with the study programme	Global and subject level surveys
Do not exceed the regimen of stay in the 1st year (%)	Undergraduate students must exceed a certain number of ECTS to remain in the degree
Performance rate (1st year)	Follow -up of Undergraduate students performance, %ECTS pass
Submission rate (to 1st year)	Follow -up of Undergraduate students performance, exams taken
Drop-out rate for 1st year students (degree)	Measure the success at the first year of degree
Core competences	Core competence is an indicator, which evaluates each course imparted at the faculty. According to students and alumni opinion, it assesses if the core competences previously stablished in the curricula of the course have been developed during it and to what extent. Not only technical skills are included, but communications skills, intercultural skills, team skills, etc.
Congruence between competences, teaching methods and assessment methods	Congruence between competence, teaching methods and assessments methods is a course indicator in which are contained several items. Under this indicator, the goals of the course, the teaching method and the examinations way are assessed. This way and taking at the starting point the goals stablished previously by the titular of the programme, the congruence indicator examines the link between them and the teaching way, the examination way and the numbers of the points dedicated to each goal by the teacher. Other item included is referring to the logic organisation of the course.
iC18	Percentage of graduates who would enrol again in the same university course of study: s/t*100, where, s: number of graduated students who would enrol again in the same university course of study and t: total number of graduated student
iA6	Percentage of graduate students employed within one year from the degree: gs/t_gs*100, where, gs: number of graduate students employed within one year from the degree and t_gs: total number of students graduated in the same academic year
1.4	Average delay in earning qualifications
F.05	Percentage of students who decide to continue their studies with more than 39 CFU earned in the first year : s/t*100, where s: number of students who have achieved more than 39 CFU in the first academic year and t: total number of students who decide to enrol in the second academic year
F.07	Satisfaction with teaching by attending students - Student Opinion Survey: (p-a)/(v-a) * 100, where p_a: number of answer to the

	survey with positive judgments ("definitely yes" or "more yes than no") and v_a: number of valid answers to the survey
iA7	Percentage of graduates employed within three years after the title: gs_e/t_gs*100 where gs_e: number of graduated students employed within three years after the title and t_gs: total number of graduated students in the same academic year
iA3	Percentage of students enrolled in the first year from other regions: s_r/t_s*100 where s_r: number of students enrolled in the first year from different region from the one of the university campus and t_s: total number of students enrolled in the first year
Admissions	Annual measurement of the percentage of prospects, who passed the TOEFL test, applicant pull, selectivity (admitted), yield (matriculated)
Financial Aid	Annual measurements of the percentage of prospects applying, percentage of current students applying, percentage of students receiving financial aid
Staff & Faculty	Measurement of faculty loads, student-faculty ratio, percentage of expatriate staff and faculty, percentage of faculty with PhD
Percentage of study fields accredited for the maximum period out of all study fields conducted at Kolegija	Number of study fields accredited for the maximum period / total number of study fields conducted
Percentage of students who completed their field and cycle studies on time	Number of students who completed their field and cycle studies on time / total number of students who completed their field and cycle studies
Percentage of foreign students studying the entire study program out of the total number of Kolegija students	Number of foreign students studying the entire study program / total number of Kolegija students
Percentage of incoming international students out of the total number of Kolegija students	Number of incoming international students / total number of Kolegija students
Percentage of outgoing students out of the total number of Kolegija students	Number of outgoing students / total number of Kolegija students
Student Engagement	Level of engagement and motivation of the student with the subject. Something beyond mere “satisfaction”.
Competences assessment	Degree of competences acquired by students (Apparently, it is embedded in Bologna framework, but it is still not well implemented. It should be split marks on knowledge and on competences.)
Number of degrees accredited “on-track-to-excellence“	Count of degrees accredited “on-track-to-excellence“
“Nota de tall”	Lower qualification for admission to bachelor’s degrees
Success Rate	Credits passed / credits presented (for each academic year)
Efficiency Rate	Credits of the degree / average number of credits enrolled by the students of a cohort to be able to graduate

Graduate School	Integration of postgraduate activities into a common body, at the level of the rest of faculties. The indicators should show the impact in society of the activity (# of students in postgraduate programs that have a job related to the studies within the first 6 months after completion).
Common curricular programs	Framework curricular review process (# of shared subjects across the whole curriculum)
Number of risk students included in an accomplishment individual plan	Students with low academic success and social and psychological problems
Percent of approval in Curricular Unit	(N student approved on curricular unit / N of enrolled student on curricular unit) x 100
No. of candidates in 1st. option/No. of vacancies by 1st cycle degree program	Ratio candidates 1st option/No. of vacancies by 1st cycle degree program
No. of degree programs with public information about academic success and employability indicators	No. of degree programs with public information about academic success and employability indicators
Academic performance success index (N + 1) of the program	Proportion of graduates in a given program/degree (in "N" + "N + 1" years) in relation to those enrolled in the 1st year, for the 1st time, of that program “N + 1” years before ("N" being the number of years of study required to complete this program/degree).
Average of the Global Assessment of Courses	Evaluation made by students regarding the functioning of the courses, using a scale from 1 to 9
Response rate of students to the pedagogical enquiries	% of students, from the 1st and 2nd cycle, that respond to the pedagogical enquiries applied every semester | Formula: (number of submitted responses / number of expected responses)*100
Number of students who return to the university for lifelong studies and knowledge updating	Formula: ∑ students that enrol again in the university for lifelong studies and knowledge updating
Number of graduates in N+1 years for each programme	Number of graduates in N+1 years for each programme
Employability rate	% of graduates that obtain employment in areas of activity related with the study cycle area
School dropout rate	Enrolled Students n / n + 1 -Graduates n / n + 1 = A | Enrolled Students n + 1 / n + 2 -New Students n + 1 / n + 2 = B | Dropout Rate = (A-B) / A
Signalled Course Unit	Pedagogical surveys in the dimensions of Skills Development, Curricular Unit Operation and Teaching Performance.
Study cycle search	Number of candidates per study cycle
Enrolled students	No. of students enrolled for the 1st time per study cycle
Completion rate of study cycles within expected number of years	Number of students who completed their study cycle within expected number of years / Number of graduate students
Percentage of masters and doctors having an employment fitted to their study area, one year after obtaining their degree	Number of masters and doctors surveyed by OBIPNOVA, employed one year after obtaining their degree, having an employment fitted to their study area / Number of masters and doctors surveyed by OBIPNOVA, employed one year after obtaining their degree

The indicators presented in Table 3 address the Research process from different perspectives, namely: the quantity and quality of teachers and researchers scientific production, the quality of the research units (based on their external evaluation), the level of funding for research, the quantity and quality of research projects and the degree of development of doctoral studies.

Table 3 – Quality Indicators for Research

Name	Description
Scopus + Web of Science scientific publications	Total number of scientific publications (all types of documents) indexed on the Web of Science and Scopus
Scientific Research Grants	Total number of ongoing scientific research grants, per year
% of projects in partnership	Number of projects in partnership / Total number of projects
Rate of approved projects	(No. of applications / No. of projects approved) x100
Position in the International Rankings (Scimago)	Scimago indicators
Publication ratio per teacher (WoS + Scopus)	Σ indexed publications in WoS and Scopus / No. of FTE teachers
Financing of research units	Amount of revenue obtained by the research units (thousands of euros)
WoS documents ratio, per doctorate (FTE)	Ratio of documents of all types and languages of publication, indexed in the WoS - Web of Science (Science Citation Index Expanded, Social Sciences Citation Index and Arts and Humanities Citation Index) per doctorate (FTE) Quinquennium of publication year n-6 to n-2, for average of doctorates FTE n-7 to n-3
% citable WoS documents, among the 10% most cited in the area	% of citable documents (article and review types) indexed in the WoS - Web of Science (Science Citation Index Expanded, Social Sciences Citation Index and Arts and Humanities Citation Index) among the 10% most cited in the area (WoS scheme), according to InCites. Five-year publication year n-6 to n-2, measured in year n
% of articles in the 1st quartile of the scientific area	Number of articles in the 1st quartile of the scientific area in year n / total articles published in year n
Research Units rated Very Good or higher	Number of Research Units with a rating of Very Good or Excellent by the Foundation for Science and Technology
% of teachers and researchers integrated in Research Units	Number of teachers and researchers holding a PhD integrated in Research Units / total number of teachers and researchers
% of teachers with a PhD per study program	Number of teachers with a PhD / total number of teachers per study program
% teachers join ERASMUS Program	Number of teachers that join ERASMUS / total number of teachers
% thesis published in a reference scientific journal	% Master Thesis Published in scientific journals
Qualitative Assessment (Research)	Research qualitative assessment Publications in JCR journals (Absolut Number) Σ Factor impact journals Average

Scientific publication per year	Number of publications generated by research or theoretical summarizations.
PhD defences per year	Number of doctorate defences in a whole year in the University.
iA_C_3	Percentage of students enrolled in the first year of doctoral courses who graduated from another university: ds/t_ds*100, where, ds: number of students enrolled in the first year of doctoral courses who graduated from another university and t_ds: total number of students enrolled in the first year of doctoral courses
iA_C_4	Percentage of professors and researchers hired in the previous year not already in service at the University: pr/t_pr*100, where, pr: number of professors and researchers hired in the previous year not already in service at the University and t_pr: total number of professors and researchers hired in the previous year
2.1	Number of doctoral students
R.01	Percentage of PhD students with access qualifications obtained in other Italian and foreign universities out of the total number of PhD students: PhD_s/t *100, where PhD_s: number of PhD students with access qualifications obtained in other Italian and foreign universities and t: total number of PhD students
R.08	Square meters destined for research laboratories made up to standard (value 0.5), renovated or newly built (value 1) out of the total square meters destined for research laboratories: Σ(i to n) m(i)*v / m(tot), where n: total number of laboratories assigned to the works, m: square meters, v: job type value (0.5 if the laboratory is made up to standard; 1.0 if the laboratory is renovated or newly built) and mtot: total number of square meters detonated for research laboratories
4.2	Number of researchers with at least four publications from 2015 to 2019
Methodology competence	Degree of research methodology competence. It should encompasses the research tools knowledge and the capacity to innovate with new research instruments.
Research network	Level of research network. Capacity to create and maintain long term teams of research, which enhance the continuous improving and the updating of research aims.
Incomings from competitive projects	Total incoming from competitive projects
Number of publications	Number of publications in JCR journals
Q1	Number of papers authored in an Academic Subject in journals with Q1 Journal Impact Factor Quartile. Data are collected from Web of Science and InCites
CNCI	Category Normalized Citation Impact (CNCI) is the ratio of citation of papers published in an Academic Subject during a period of time to the average citations of papers in the same category, of the same year and same type
Percentage of institution budget devoted to Research and Transfer activities	Budget devoted to Research and Transfer activities / total budget
Number of research contracts	Number of research contracts

Percent of student engaged in scientific dissemination in 1st cycle	(N students engaged /N total students) x 100
Percent of students research trainers	(N students research trainers / N total students) x 100
% of eligible doctorates in R&D Units classified as very good or excellent	No. of eligible doctorates in R&D Units classified as very good or excellent / Total no. of eligible doctorates * 100
H index (WoS, SCOPUS)	No. of publications (articles) with at least h citations
Average citations per paper	Average number of citations per paper
Research projects with international collaboration	Number of research projects with international collaboration
Number of articles in the top 5% journals of the scientific area	Formula: ∑ articles published in the top 5% journals (WoS)
Financing contracted in research programs	Formula: ∑ Annual financing for research programs
N.º of papers per teaching staff per year	N.º of papers per teaching staff per year
N.º of teaching staff integrated in FCT research units	N.º of teaching staff integrated in FCT research units
Number of applications for international funded projects	Number of applications for international funded projects
FWCI (Field Weighted Citation Impact)	FWCI (Field Weighted Citation Impact) according to Scopus or Web of Science
Percentage of publications in the top 10% of the most cited worldwide	Percentage of publications in the top 10% of the most cited worldwide according to Scopus or Web of Science

The indicators identified for Relations with Society cover the range of activities usually associated with the so-called HEIs Third Mission. As such the indicators are quite diverse and address a series of issues such as: projects with external entities and revenue from those projects; students and internships/dissertations/thesis in companies; solidarity actions / social actions; lifelong training; research in open access; start-ups and spin-offs; inventions and patents; networks and events such as workshops and seminars.

Table 4 – Quality Indicators for Relations with Society

Name	Description
PSER	Revenue from services provided related to R&D&I
Projects	Total number of R&D&I projects, financed by regional and national companies and institutions.
Number of inclusive school projects	Σ of inclusive projects with institutions of the local community (social sector)

Number of eco-school projects with the community	Σ of eco-school projects with the community
Tailored training	Number of tailored training courses held by the participating entities
% of new national and international R&D&I projects, in partnership with companies	Percentage of R&D&I projects in partnership with companies, with national and international funding, whose financing contract was signed in year n, compared to the total of R&D&I projects
% of citable WoS documents in open access	% of citable documents (article and review types) indexed in WoS - Web of Science (Science Citation Index Expanded, Social Sciences Citation Index and Arts and Humanities Citation Index) in open access (includes all types in WoS - Gold (DOAJ and Other), Bronze, Green (Published and Accepted). Five-year publication year n-6 to n-2, measured in year n
Contracted services	Number of contracted services in a certain period of time
Participation in networks of collaborative laboratories	No. of collaborative laboratories
Educational projects in business context	Students who in the n-1 academic year finished their master or integrated master dissertation under protocols with companies
Number of agreements signed for internships	Number of agreements signed for internship
Number internship institutions	Relation with companies and institutions
Number of chapters (meeting places for Alumni)	Number of meeting places for alumni around the world
Sustainability	Level of achievement of the defined sustainability goals –called PPP (People, Planet & Prosperity)
Interview in media	Number of interviews in media
Number of meeting at high schools to inform about the programmes	Number of meeting at high schools to inform about the programmes
Number of Honoris Causa doctors awarded and Number of Honoris Causa doctors obtained by the faculty	The number of Honoris Causa doctors, divided between those who were awarded by the Institutions and those who actually were awarded to university staff.
Number of exchange or cooperation agreements in progress outside the country / Number of foreign countries with which an exchange or cooperation agreement is in progress / Number of partner institutions within the framework of current exchange or cooperation agreements	The number of exchange or cooperation agreements per year, with three subdivisions: the exchanges and cooperation agreements which are in progress outside the country, the foreign countries with which there is an exchange or cooperation agreements (in progress), and the partners institutions within the framework of those mentioned agreements.
Number of Auxipress mentions	Number of times the University is mentioned in media –measured per year through the media monitoring tool called Auxipres.
iC10	Percentage of CFU earned abroad by regular students out of the total credits earned by students within the normal duration of the course: c_ex_reg/t_cfu *100, where, c_ex_reg: number of CFU earned abroad by regular students and t_cfu: total number of cfu of that course of study

iC12	Percentage of students enrolled in the first year of the bachelor's and master's degree programs who have achieved their previous qualifications abroad: bms_ex/t_bms*100, where bms_ex: number of students enrolled in the first year of the bachelor's and master's degree programs who have achieved their previous qualifications abroad and t_bms: total number of students enrolled in the first year of the bachelor's and master's degree programs
3.5	Strengthen skills in the field of human sciences and society for the benefit training, research and technology transfer
F.16	Number of international agreements that have incoming or outgoing mobility: Σ(i to n) of in(i) + Σ(j to m) of ou(j), where n: number of international agreements that have incoming mobility; in: international agreement (incoming mobility); m: number of international agreements that have outcoming mobility and ou: international agreement (outcoming mobility)
T.04	Number of students enrolled in accredited courses of Higher Education, Lifelong Learning, 1st level or 2nd level Masters
iC11	Percentage of graduates within the normal duration of the course who have acquired at least 12 CFU abroad: sg_a/t_sg*100, where sg_a: number of students graduated within the normal duration of the course who have acquired at least 12 CFU in foreign university and t_sg: total number of students graduated in the same academic year
I.8.a	Number of Public Engagement initiatives: activities organized institutionally by the university or its own non-profit structures with educational value, cultural and societal development
Agreements with prestigious external institutions	Number of agreements with external organizations, industry and institutions, in order to work for common objectives at long rang term.
Incomings from Knowledge and Technology Transfer (Sectorial Campuses)	Total incoming from campuses
Number of spinf-offs participated by the University	Number of spin-offs participated by the University
Society challenges	Number of projects, contracts or other collaborations, that have societal challenges as a priority , carried out per year
Mutual and effective collaboration with stakeholders from the business, social and public administration fields	Number of Networking activities
Public engagement	# of faculty members involved in public engagement (activities with social impact) #PE funding percentage from R&I # of engagement activities (symposium, T&L or R programs that include public influence))
Number of Community based project with external partners	Number of Community based project with external partners

Number of Voluntary students involved in scientific, cultural and social activities	Number of Voluntary students involved in scientific, cultural and social activities
% of Theses developed with supervisors affiliated with industry	No. of dissertations evaluated in the institution with at least one supervisor belonging to a company
No. of inventions protection requests (patent requests, utility model requests, provisional patent requests and invention requests transmitted to the institution)	No. of inventions protection requests
No. of patents granted	No. of patents granted
Incubated companies	Number of new companies incubated at the institution
Volume of own revenues from external contracts	Financial amount of own revenues resulting from external contracts
Number of companies installed in the city / region through the university	Formula: ∑ Companies installed in the city / region through the university
Number of volunteer actions involving the university students	Formula: ∑ Volunteer actions involving the university students
Nº of protocols established with external organisations	Nº of protocols established with external organisations
N.º of events (workshops; seminars) directed at lifelong learning	N.º of events (workshops; seminars) directed at lifelong learning
Number of Social Responsibility actions	Number of actions developed annually
Number of Alumni Network members	Number of graduates registered in the Alumni network database
Connection to companies: protocols	Number of internship protocols, project or applied dissertations established by study cycle and by organic teaching unit
Connection to companies: students	Number of students involved in internships, projects or dissertations applied in external entities by cycle of study and by organic teaching unit
Total number of created start-ups	Total number of created start-ups for the year
Number of CoLab participations/coordinations, agreements, contracts and partnerships within the scope of the 3rd mission	Number of CoLab participations/coordinations, agreements, contracts and partnerships within the scope of the 3rd mission, that took place during the year
Own Income by academic ETI	Own Income by academic ETI
Rate of cooperative projects with external entities	Rate of cooperative projects with external entities (comparing to all projects)