CRUI
Conferenza dei Rettori
delle Università Italiane

CRUI Working Group on International Rankings: activities, results and prospects

2017 - 2020

Edited by

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Indice

4 . Introduction

4 . Why form a CRUI Working Group on International Rankings

9 . 1 Composition of the working group: membership and profile of the universities involved

10 . 1. Membership of participating Institutions
11 . 2. Institutional profile of participating Universities
13 . 3. Members' opinion of the activities carried out

17 . 2 Structure of the meetings and services offered

17 . 1. Communications and international guests
17 . 2. The Services for Working Group members
18 . 3. Working Group members in the Advisory Board and Steering Committee and other stakeholders
19 . 4. Conferences organized, promoted and attended

21 . 3 Comparison between university systems in rankings and in OECD data

21 . 1. Why Italy-France-Spain-Germany, why QS-THE?
24 . 2. The four university systems compared by QS and THE
26 . 3. Beyond rankings: University education in OECD data
34 . 4. Considerations on the data

35 . 4 Non-binding indications by the working group

35 . 1. QS
39 . 2. TIMES HIGHER EDUCATION
42 . 3. U-MULTIRANK
47 . 4. UI GREENMETRIC
50 . 5. Summary of 2017-2020 results

52 . 5 Conclusions

52 . The CRUI Working Group's experience with international rankings: legacy and prospects

Introduction

Why form a CRUI Working Group on International Rankings

Despite being published since 2003 with the first edition of the Academic Ranking of World Universities (ARWU – Shanghai Ranking), world university rankings are still a relatively recent phenomenon in the field of higher education and research. Yet, during the last 17 years, we have witnessed a proliferation of academic rankings – the IREG Observatory on Academic Ranking and Excellence counts some 50 rankings in its inventory – drawn up with different aims and methods and factoring in different aspects and numbers (scientific production, reputation, economic data, number of students, etc.). Moreover, in the past few years, there was an exponential growth in the impact that rankings have on national and international media and consequently on how much they weigh on students' choice of university courses, especially international students. But universities' position in rankings also increasingly affects the evaluation of partners in scientific or educational collaboration agreements and can also represent an attraction for young talents or high-profile scientists. Recent examples also show how given rankings can affect the choice of international funding agencies or the policy-making of national governments. For all these reasons, academic rankings now represent a strategic and highly debated element in the international higher education and research scenario, a component that no national university system can afford to ignore.

In this scenario, in 2017, Italian universities were under-represented in leading international rankings. To this effect, the world rankings most represented in the media such as Quacquarelli Symonds (QS), Times Higher Education (THE), ARWU and the US News & World Report listed 33 universities in Italy against 39 in France, 47 in Germany and 70 in the United Kingdom. The picture appeared to be unfavourable also in respect of their positioning, if we consider that the Top 300 world universities included only 6 Italian universities

according to the QS ranking (against 12 in France, for example) and 5 in the THE ranking (compared to 9 in France). If we consider that in the world there are approximately 17,500[1] universities and higher education institutions while major international rankings only list slightly over 1,000 universities (roughly 6%), the overall representation of the Italian university system in these rankings appeared to be rather discouraging in terms of the quality of the educational and research activities carried out on our national territory. This gave rise to the need to do some brainstorming between universities to understand what could better leverage the Country's representation in international rankings albeit being aware of the fact that Italian universities are founded on principles such as inclusivity and the right to education, which may present elements naturally in conflict with criteria such as the faculty-student ratio used to evaluate the level of teaching by the most popular world rankings.

1. Source: Report EUA 2013

These considerations laid the grounds for the creation of the CRUI Working Group (WG) on International Rankings in 2017 which, by reaching beyond the competitive logic of academic rankings that put universities against each other, proposed an extremely pragmatic collaborative approach and a common vision of the Italian system based on the exchange of best practices and the selection of common strategies. The CRUI Working Group on international rankings, on a middle-term timeline of 2-3 years, aimed to achieve the following aims:

- Increase the number of Italian universities represented in international rankings
- Improve the positioning of Italian universities in the rankings, knowing that this also depends on the performance of all the universities included in the ranking
- Coordinate communication to political bodies and national media at the release of leading world rankings
- Draw up guidelines (Country How To) on how to provide data to what are considered to be primary rankings
- Propose to ranking managers, officially and with one voice, any possible supplement or change of method to be made

The perspective of taking a Country approach influenced the decision to not deal with national rankings in order to focus on the international impact of the Italian academic system.

In relation to drawing up guidelines for the submission of data, it should be pointed out that, albeit sharing some common aspects (the use of publications and bibliometric citations), the methods used to compile rankings vary from one agency to another, both in the choice of parameters and in the weight attributed to them. In this respect, while some of the rankings are exclusively based on public or commercial sources, particularly on bibliometric measures, others supplement these sources with opinion polls among the academic community and employers and with data and information directly acquired from the universities. We therefore took the opportunity to concentrate on the latter type of ranking in drawing up recommendations aimed at standardizing, at least at national level, definitions and data submission procedures (number of students, number of faculty members, etc.), while taking into consideration the peculiarities of the Italian university system. Seeing that QS and THE both fall within this category and are the two most popular rankings in the world, with the highest impact on the media, it came natural to primarily focus on these rankings in drawing up common guidelines for the submission of data.

Alongside more traditional rankings which aim to measure the quality of teaching and research, other types of rankings have recently come into play on the international scene which survey different factors such as the efforts made by universities in terms of innovation or sustainability. The first ranking to be launched in this field was Greenmetric, which was promoted by the University of Indonesia in 2010 with the aim of measuring the efforts made by universities worldwide in championing environmental sustainability through surveys on aspects such as mobility, infrastructure, energy efficiency and waste management. In the light of the growing importance of these

aspects in outlining universities' strategies and development plans and seeing that at the time Greenmetric was the only international ranking focusing on sustainability, the CRUI Working Group decided to develop indications and guidelines for the submission of data also for these rankings, supporting the WG members in interpreting some of the requests and promoting, when necessary, a more structured exchange with the contact persons of the University of Indonesia. For this activity, the CRUI Working Group also counted on the cooperation of the "RUS (Rete delle Università per lo Sviluppo Sostenibile) – University Network for Sustainable Development"), promoted by the CRUI in 2015 as a means for all Italian universities committed to environmental sustainability of sharing and coordinating their experience on the issue of environmental sustainability and social responsibility.

If THE and QS, in choosing their metrics and indicators – such as the faculty-student ratio or the amount of funding per teacher – seem to be more linked to an Anglos-Saxon model of university, the U-Multirank project financed by the European Commission led to the establishment of a new type of ranking in 2014 which, instead of compiling an absolute ranking of universities *(league-table)*, gives an overview of rankings customised on upstream user-provided parameters *(user-driven)*. The parameters chosen by U-Multirank include factors usually not considered in other rankings such as technology transfer or relations with the local community, intended as the economic, social and institutional context in which the university is embedded. Moreover, this instrument enables students to not only compare universities, making it possible to sort the ones with a similar profile, but also compares single degree programmes. In view of these features and of the complexity of the data and information that universities are obliged to provide to Multirank, the WG decided to empanel a Commission within the Group to establish a dialogue with the managers of the ranking, single out shared and sustainable data collection procedures and facilitate the submission of information.

The Working Group concentrated on the following four WUR – World University Rankings, the QS and THE, Greenmetric and U-Multirank, although it did not overlook analysing and investigating other rankings such as the university rankings "by subject" by QS and THE; the ARWU ranking, the QS Employability Rankings, which ranks universities based on the career possibilities for graduates, or the more recent THE Impact Rankings, which THE launched in 2019 with the aim of highlighting how the Higher Education and Research sector is working to achieve the 17 UN Sustainable Development Goals.

The pages below – after a brief overview of how the Working Group is structured in terms of activities, meetings, participation, hearings and conferences – will illustrate some comparisons with OECD data, the analyses conducted, the results obtained and the recommendations drawn up for the various subjects analysed and the different rankings surveyed. The second last chapter will instead give an overall view of the knowledge acquired and the results achieved while leaving it up to the final conclusions to describe the value added that the Working Group acquired through the relations established with national media and international ranking agencies and through its collaboration with entities with similar experiences in other European contexts. Lastly, we will take a look at the perspectives and prospects for the future, also thanks to the results of an opinion poll conducted among the members of the Working Group.

1. Composition of the working group: membership and profile of the universities involved

Already several decades ago, long before academic rankings received the media hype they now enjoy at global level, Italian universities – compared to other public utility services delivered by State-run organizations – had already become more exposed to part of the media's attempt to give grades to the performance of universities and to provide public opinion with rankings that showed the institutions' performance on the basis of a scoring system.

As a matter of fact, already in the 1990's the Italian academic world had acquired great familiarity with the principles of accountability and transparency, spurred by the application of performance criteria in allocating public funding, the spread of digital publications with their relative bibliometric indexes, the introduction of evaluation units and subsequently by the monitoring activities of the CNVSU (Comitato nazionale per la valutazione del sistema Universitario – National University System Evaluation Committee), just to mention a few examples.

Nonetheless, although the rankings were not entirely overlooked by the Governance of Italian universities, at the time there continued to be members of the academic world who, at the very least, tended to downplay the hype raised by daily newspapers around the rankings or, in some cases, to firmly discredit the efficacy of a method that reduced to just a handful of numerical indicators a much more structured complexity.

Much has changed since then, both due to the growing credit that the principal rankings have gained, especially in the Asian and American continents, and to the increased tendency of Italian policy-makers to evaluate and reward universities through performance indicators in areas such as scientific productivity, teaching effectiveness, internationalization and a virtuous use of financial resources.

Universities witnessed a full-fledged invasion of indicators in their day-to-day conduct of business, turning evaluation and self-assessment procedures – in terms of competences and organizational costs – into a burden comparable to that of the traditional mission of teaching and research. It is self-evident that over time the progressive success of rankings, alongside the universities' greater opening to internationalization strategies and a greater exposure to monitoring and self-evaluation practices, has also led universities to be more sensitive to the rankings that periodically appear on daily newspapers and the news media.

An emblematic evidence of this growing interest can be found in the great participation recorded by an initiative launched by the CRUI Presidency in 2017 – which will be broadly covered in this report – when, for the first time in the Association's history, the proposal was made to create a working group (WG) on International Rankings which all universities were invited to join through the designation of a representative.

1.1 Membership of participating Institutions

At the time this report was written, 83 Italian universities were members of the Conference of Rectors (CRUI), 67 of which sat on the Working Group on academic rankings.

This membership is partly due to the progressive increase in the number of entities involved over time but is above all the fruit of the universities' immediate response to the initiative which, from the very beginning, manifested their interest in contributing to a debate on the issue of rankings.
Customarily, the Commissions that operate in a structured manner within the CRUI on the main issues of interest of the university system (teaching, scientific research, international affairs, etc.), comprise a Pro-Rector or a Delegate of the Rectorate for every university.

The idea of establishing a Working Group instead stemmed from the will to propose a topical issue to Italian universities, explore their interest therein and, at the same time, offer the universities showing the greatest interest the possibility of sitting around a table to debate the issue at national level.

As stated above, the proposal immediately received such positive feedback in terms of membership that it did not configure a restricted group exclusively driven by the competences of a selected short list of universities. Quite the opposite: the membership that consolidated over time now includes more than 80% of the universities, thus conferring the Working Group a broad representativeness that extends to almost the entire university system. Furthermore, the initial membership gathering system showed how the issue was already ripe in several Italian universities, to the extent that some of them had already appointed a Delegate of the Rectorate on the issue of rankings. However, in many cases, this appointment coincided with other institutional appointments in the university such as especially that of Delegate for internationalization or for evaluation and quality. Moreover, the peculiar theme and institutional nature of the Working Group – less focused on policy matters than on technical and operational issues – required that the WG, even if operating under the mandate of the CRUI, not only included professors delegated by the Rectorate but was also actively and intensely represented by technical profiles usually drawn from statistical offices or in charge of quality assurance. This made it necessary to have more than one representative for single universities (another partial difference compared to conventional CRUI Commissions), thus bringing the total membership to 94 in 2020.

1.2 Institutional profile of participating Universities

In terms of size, the group of universities represented in the Working Group is rather diversified, as shown in Table 1.1. where numerous institutions are represented in each

one of the 4 categories according to the number of students enrolled. The distribution reveals a larger concentration in the intermediate categories with a median value of 15,812 students.

STUDENTS ENROLLED (AY 2019/20)	UNIVERSITIES	
	NUMBER	%
Less than 5,000	11	16,4
Between 5,000 and 15,000	19	28,4
Between 15,001 and 40,000	26	38,8
More than 40,000	11	16,4
Total	**68**	**100**

Tab. 1.1 Size of the Universities represented in the WG

From the point of view of their legal status, the universities represented in the Working Group prevalently fall under the State University category (more than 8 out of 10, as shown in Table 1.2). In addition, the same category of State-run universities includes three Higher Education Institutions (Schools of Advanced Studies) that are widely recognized to be points of excellence on the Italian and international academic scene, even if their particular institutional profile focuses on providing third-cycle higher education: a reason for exclusion for some ranking agencies which do not rank universities that do not offer first or second-cycle qualifications. The Working Group counts 11 members from Non-State-run universities, representing 16% of the WG members, which is not too different from the representation in percentage points of Non-State universities in the CRUI (19%). In addition, the last column on Table 1.2 shows the slightly lower, albeit not negligible, tendency of Non-State universities to join the Working Group compared to State universities.

Tab. 1.2 CRUI member Universities and Universities in the WG, by legal status

STATUS	UNIVERSITIES IN THE WG	%	TOTAL UNIVERSITIES IN THE CRUI	% IN WG OVER TOTAL CRUI
State Universities	56	83,6	67	83,6
of which School of Advanced Studies	3	-		-
Non-State Universities	11	16,4	16	68,8
Total	**67**	**100,0**	**83**	**80,7**

Also, from the point of view of geographical representativeness, the composition of the WG reveals an essential balance among universities nationwide, as shown on Figure 1.1. Indeed, the number of universities that are members of the Working Group is pretty much in line with the total number of universities that are members of the CRUI, reflecting the capillarity of the University system in the Country's different geographic areas.

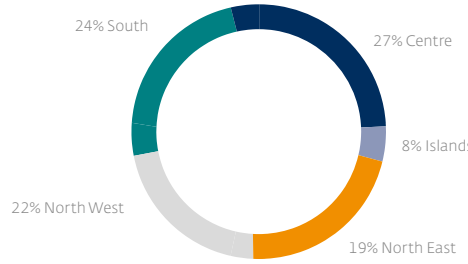


fig. 1.1 Distribution of the member universities of the WG over the national territory

1.3 Members' opinion of the activities carried out

In alternating periods between October 2017 and October 2020, the Working Group convened 10 meetings at the offices of the CRUI, the last of which was held online because of the prevention measures adopted for the Covid-19 medical emergency. An additional meeting with some of the Working Group members was held in November 2017 concomitantly to an international event on rankings hosted at the University of Padua[2]. The WG was normally attended by some 40 people, thus assuring a wide-reaching debate and sharing of experiences also thanks to the presence of international guests.

A particularly appreciated idea was the creation of an area reserved for WG members on the CRUI Website. It features a document repository containing hundreds of files: in addition to storing the minutes of the meetings, the slides shown in presentations and the most important outputs of the WG – such as the guidelines for universities for the

2. Academic Rankings and civic universities, University of Padua 1-2 November 2017

submission of data to ranking agencies – the website also vaunts a considerable amount of support material made up of technical analyses, in-depth method descriptions, the results of ad hoc surveys carried out by the WG, simulations, reports on the results of rankings and statistical computations made available to the WG's coordinating group and also to single universities.

Among the most indicative data expressing the level of appreciation of the material on the one hand and the volume of activities promoted by the WG on the other is the fact that, between 2017 and 2020, 2,480 documents were downloaded from the site. Further evidence of the interest raised is the fact that the website is not accessible to the public which means that a large number of documents was exclusively consulted by the WG members.

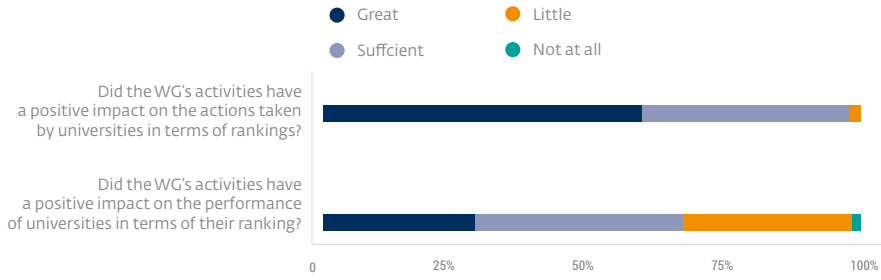
More in general, the WG members' overall appreciation of the results achieved in the course of 4 years of activity was the object of a survey conducted in September 2020 with 35 respondents, whose main results will be illustrated below.

The survey respondents prevalently represented the members with the best attendance record at the WG meetings, 80% of who always or often attended the meetings. As for the remaining 20%, it should be pointed out that in universities in which a new Rector was elected during the 2017-2020 four-year period, there was often a turnover in the members delegated to sit on the WG, some of whom joined the WG only after most of the activities had already been expedited.

The first question on the questionnaire asked respondents to give a rough estimate of the extent to which the WG's activities and relative technical reports made available to the Group's members had influenced participating universities, by stimulating a greater in-house dynamism on the issue of rankings. In this respect, the answers to the questionnaire reveal the considerable impact exercised by the WG which, as can be seen on Figure 1.2, generated "very" or "rather" significant repercussions in 97% of the cases.

Other chapters of this report will provide an in-depth illustration of the outcomes produced by the WG's actions in terms of improving the positioning of the universities in major rankings. In this chapter, on analysing the second question in the aforesaid survey, we will only mention the answers received from survey respondents according to whom the impact on the university's performance was very or rather significant in 71% of the cases. Even if the level of effectiveness did not match that of the first question, this answer too highlights the incisiveness and fruitfulness of the Working Group's activities for the university system.

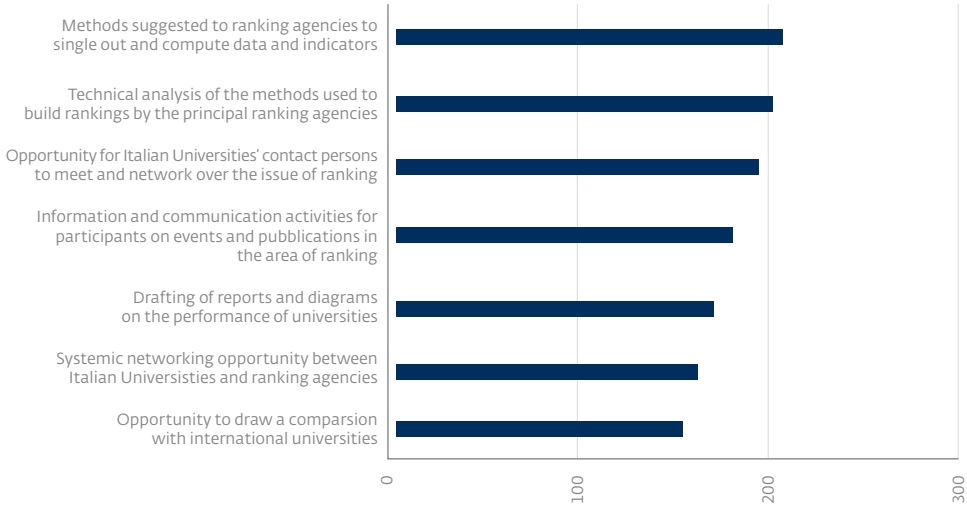
fig. 1.2 Survey on the impact produced by the WG



Further down in the survey, the main aspects linked to the activities of the WG were synthesised into seven items and survey respondents were asked to put them into a ranking, assigning a score to the single items based on the importance attributed thereto. Figure 1.3 below shows, in decreasing order, the items that were seen to interest the respondents most based on the scores accumulated through the questionnaire. Although the numbers of the survey only produced a minimum difference in the appreciation levels expressed for the different items, priority was given to two aspects that best characterize the contribution made by the Group, namely that of the technical scrutiny of the methods applied in building the major rankings and, above all, that of developing guidelines to optimize the universities' submission of data to ranking agencies. It is interesting to note how the third place in this ranking is occupied by the possibility of

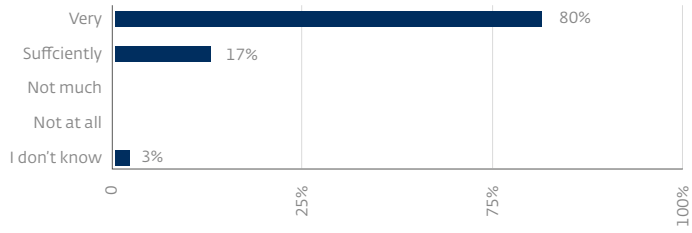
structuring a comparison between Italian universities, an opportunity made possible precisely through the establishment of an academic network of interlocutors' representative of the system.

fig. 1.3. The level of appreciation of the aspects linked to the WG



The last question on the questionnaire aimed to probe the respondents' opinion on the opportunity to have the CRUI exercise a national coordination of Italian Universities in the future. The survey recorded a net prevalence, with a large majority of votes (Figure 1.4), of those who strongly hope for the Conference of Rectors to maintain a supervisory role on rankings.

fig. 1.4 Percentage of answers to the question: Do you think that in the future it would be useful for the CRUI to coordinate Italian Universities on the issue of rankings?



2. Structure of the meetings and services offered

2.1 Communications and international guests

The *Communications* section that opens the WG meetings presented new international rankings or rankings with a lesser impact on the Italian context, announced the deadlines for the submission of data to various agencies and provided information and communications on initiatives, events and publications relative to the realm of rankings. In 5 meetings out of 10, the Working Group hosted a guest international expert:

DATA	OSPITE
12/01/2018	Jan Sadlak Presidente IREG – Observatory
1/06/2018	Piero Posocco Times Higher education (via Skype)
21/09/2019	Riri Fitri Sari Chair person UI Greenmetric
01/03/2019	Dario Consoli QS World University Rankings
17/01/2020	Zuzanna Gorenstein HRK Berlin

Tab. 2.1 International guests of the Working Group 2018-2020

2.2 The Services for Working Group members

The meetings held in Rome were organised by the Secretariat of the CRUI, which assured the presence of an inhouse coordinator, Dr Massimo Carfagna, and set up a Web file storage space for all the documents produced.

The University of Bologna was instead in charge of producing reports and diagrams on the performance of single universities and nationwide. In general, the activities of the Working Group were conducted with the human resources who volunteered to perform the task, especially from the coordinating Universities of Bologna and Padua – although with key contributions from the universities of Turin, Trento, Bergamo, Milano Bicocca– offering WG members a

first opportunity of debate between Italian universities and ranking agencies.

2.3 Working Group members in the Advisory Board and Steering Committee and other stakeholders

The activities of the Working Group were not limited to the meetings held in Rome from October 2017 to October 2020. The presence of Working Group members in technical and advisory committees of several ranking agencies contributed to voicing the opinion of Italian universities on the international scene. Moreover, the participation in international conferences dedicated to rankings and, even more so, the organization of said meetings in the two-year-long activity of the Working Group, contributed to enhance the reputation of Italian universities. The Table below shows the presence of Italian representatives in a variety of organisations:

Tab. 2.2 Rappresentanti italiani in organismi internazionali collegati ai ranking Accademici

ORGANISATION	FUNCTION	UNIVERSITY
QS ADVISORY BOARD	The board advises QS on any aspect of university rankings, including the methods used to produce them, possible new rankings, and the effect and impact of rankings around the world.	AMS University of Bologna Bocconi University
THE ADVISORY BOARD	THE will be recruiting a new advisory board to provide guidance and oversight of the methodology going forward.	Proposed candidacy of the University of Padua
GREENMETRIC STEERING COMMITTEE	The SC consists of regional coordinator representatives, in cooperation with host university, which hosts UI Greenmetric World University Rankings events.	AMS University of Bologna
MOSIUR EXPERT GROUP	The experts, representing universities and research centres of US, UK, Brazil, China, India, South Africa, Iran, Italy, Belgium, Turkey, and Russia, looked into applicability of the draft methodology criteria across nations and education systems.	AMS University of Bologna Link Campus University, Rome
IREG OBSERVATORY EXECUTIVE COMMITTEE	IREG is a non-profit association of ranking organizations, universities and other bodies interested in university rankings and academic excellence.	AMS University of Bologna

2.4 Conferences organized, promoted and attended

The Working Group Coordinators organized international meetings and conferences with speakers from ranking agencies, consultants and other stakeholders. In general, Italy's participation to international academic ranking conferences is lower than that of other European countries..

Tab. 2.3 International conferences and meetings organized by the CRUI WG Coordinators

DATE	TITLE	LOCATION AND ORGANISER	ITALIAN SPEAKERS	TOTAL NUMBER OF PARTICIPANTS	NUMBER OF ITALIAN PARTICIPANTS	REGISTRATION FEE
1-2 November 2017	Academic Rankings and civic Universities	University of Padua	12/17	124	120	NO
9-10 May 2019	Rankings: a challenge to Higher Educations?	AMS Università di Bologna	5/37	155	33	YES
9 May 2019	QS Clinic	IREG Observatory	0	22	22	Reserved for Italy NO
5 November 2019	Meeting on the MosIUR ranking	AMS Università di Bologna	0	9	9	Reserved for the CRUI WG NO

The Working Group was committed to promoting a selection of international events that, starting from 2019, have witnessed a progressive increase in Italy's presence both in terms of participants and speakers, which has also been favoured by virtual editions of the meetings.

Tab. 2.4 Conferences promoted and attended 2018-2019

FEE	DATE	CONFERENCE	ITALIAN PRATICIPATION	ITALIAN SPEAKER
YES	23-25/05/2018	IREG-9 Conference - Hasselt, Belgio	YES	YES
YES	18-19/06/2018	Edu Data Summit MIT, Boston USA	NO	NO
YES	10-12/07/ 2018	Times Higher Education Teaching in higher education University of Glasgow, UK	NO	NO
NO	14/09/2018	Seminario ANVUR "Creating an Online Dimension for University Rankings: the CODUR Project" – Roma	YES	YES

FEE	DATE	CONFERENCE	ITALIAN PRATICIPATION	ITALIAN SPEAKER
YES	25/09/2018	Times Higher Education World Academic Summit: National University of Singapore	NO	NO
YES	2-4/10/ 2018	International conference Building international reputation. Alumni, reputation ambassador - Madrid	YES	NO
YES	14-16/04/2019	5th international Conference on Greenmetric- Cork	YES	YES
YES	08-10/05/2019	10 IREG Conference - Bologna	YES	YES
YES	11-12/06/2019	EDU DATA Summit - Londra	YES	YES
YES	9-11/09/2019	The World 100 Annual Conference 2019-Manchester, United Kingdom	NO	NO
YES	1-2/09/2020	Times Higher Education World Virtual Academic Summit	YES	NO
NO	13-15/19/2020	6TH International Virtual Conference on Greenmetric Teheran	YES	YES

In addition to presenting rankings and events, the Working Group also presented the essay by Ellen Hazelkorn Developing "Meaningful Higher Education Evaluation Systems: Are Rankings the Way Forward?" and the volume "*L'Italia e la sua reputazione: l'università*" ("Italy and its Reputation: Universities"), edited by Domenico Asprone, Pietro Maffettone and Massimo Rubechi for the Fondazione Italia Decide. Lastly, the "University Watch" blog by the scholar Richard Holmes.

3. Comparison between university systems in rankings and in OECD data

3.1 Why Italy-France-Spain-Germany, why QS-THE?

The study and analysis of international rankings conducted by the CRUI Working Group has led to a good understanding of the functioning of major international rankings and of their internal dynamics. However, merely analysing the functioning of rankings would have resulted in a limited activity that would have lost sight of the spirit underlying these types of surveys that, for experts, mean finding comparable elements among equivalent academic experiences. This sparked the idea of using the outcomes of the rankings as an element of comparison between European university systems comparable with the Italian system in terms of size and public vocation. The comparison was limited to the university systems of France, Spain and Germany insofar as they are large nations within the framework of European university education, with socio-economic systems similar to that of Italy and, above all, with a university system that could be defined as "public-service driven".

Thus, the research project was grounded on a simple question: how do the universities of these nations score on international rankings? And, more specifically, in what rankings are they best positioned? It is evident, also from the findings of the Working Group on Rankings, that international academic rankings are continually expanding in terms of numbers and the variety of aspects evaluated. In order to limit the scope of our analysis, attention was placed on the most widespread rankings that do not focus on single aspects (as Greenmetric or THE Impact are on sustainability) and that share a comparable methodological framework. The Quacquarelli Symonds (QS) and Times Higher Education (THE) international rankings are the ones that best meet these characteristics: in addition to being long-running, both mix reputational indexes, bibliometric and quantitative

indicators based on the data provided by single universities, such as the number of students and faculty.

The context of the four different university systems

Even if the four nations involved in this comparative analysis are all part of the European Higher Education Area (EHEA) – and consequently their respective university systems present important analogies among the varying situations that can be observed on the global scene of higher education and research – it is advisable not to overlook several relevant specificities that characterize each one of these systems.

A first key element to be taken into consideration before comparing the different university systems is the degree to which they are concentrated or scattered, intended as the ratio between the number of institutions present and the national population.

Tab. 3.1 Main data on the size of university systems in Italy, France, Spain and Germany

	NO. OF ACCREDITED INSTITUTIONS	NO. OF FACULTY STAFF[3]	INHABITANTS	INHABITANTS/ INSTITUTIONS RATIO	INHABITANTS/ FACULTY RATIO
ITALY	86[4]	92.744	60.244.639[5]	700.519	650
FRANCE	114[6]	115.571	67.063.703[7]	588.278	580
SPAIN	84[8]	171.869	47.329.981[9]	563.452	275
GERMANY	424[10]	416.241	83.157.201[11]	196.125	200

It appears evident that the Italian university system is the most concentrated of the four, insofar as the ratio between the number of inhabitants and the number of institutions is very high compared to the other university systems. Also, if we take into consideration the number of faculty members, the situation does not change, giving Italy a worse value compared to France, Spain and Germany.

In comparing different university systems, we cannot overlook the different models showing tuition fees and any possible tuition fee discount policy put in place at central level[12]; it is evident how these factors significantly affect the quality of the services delivered by the system and the accessibility thereto.

3. https://data.oecd.org/teachers/teaching-staff.htm#indicator-chart
4. https://www.miur.gov.it/web/guest/istituzioni-universitarie-accreditate
5. https://www.istat.it/it/archivio/245466
6. https://www.hceres.fr/en/evaluation-institutions
7. https://www.insee.fr/fr/statistiques/1892117?sommaire=1912926
8. https://www.ciencia.gob.es/portal/site/MICINN/menuitem.26172fcf4eb029fa6ec7da6901432ea0/?vgnextoid=364e006e96052710VgnVCM1000001d04140aRCRD
9. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=ultiDatos&idp=1254735572981
10. https://www.destatis.de/EN/Themes/Society-Environment/Education-Research-Culture/Institutions-Higher-Education/Tables/type-institution.html
11. https://www.destatis.de/EN/Themes/Society-Environment/Population/Current-Population/Tables/liste-current-population.html
12. https://eacea.ec.europa.eu/national-policies/eurydice/sites/eurydice/files/fee_support_2018_19_report_en.pdf

	% OF STUDENTS PAYING >100€	STANDARD TUITION FEES	% OF STUDENTS SUBSIDISED	STANDARD AMOUNT OF SUBSIDIES
ITALY	87%	1.001€-3000€	12%	3.001€-5.000€
FRANCE	68%	101€-1.000€	33%	1.001€-3.000€
SPAIN	70%	1.001€-3.000€	28%	1.001€-3.000€
GERMANY	nd*	1€-100€*	22%	> 5.000

Tab. 3.2 Student tuition fees and subsidies

**In Germany, the financial aspect is managed differently according to the various Lander; in general, universities do not establish their own tuition fees and some regions require administrative contributions (which, in the cases in which they apply, most frequently amount to what is indicated in the second column), or the payment of a fine in case of delays in one's course of studies.*

The first two columns, which contain data on the fees paid by full-time first-cycle students, show that all the institutions surveyed set out some form of financial contribution from students according to systems that reflect different allocation policies, typically based on criteria such as achievement and the economic situation of the family nucleus.

In particular, the Italian system is not only the one that requires a larger student segment to pay some form of economic contribution, but is also the one in which, together with the Spanish system, it is normally higher in the cases requiring it.

The second two columns instead contain data on the financial support offered to students (again full-time first-cycle students) by the different university systems. These data particularly focus on the subsidising method (even if France, Germany and Italy offer other forms of subsidy such as student loans, whose significance however is rather marginal for the purpose of this analysis).

The granting of subsidies takes into consideration several criteria which form the basis for different national allocation mechanisms. In contrast with the student contribution system, the Italian system's performance proves to be

virtuous in terms of the amount of subsidies granted but continues to be poor in terms of the student population segment receiving these subsidies.

3.2 The four university systems compared by QS and THE

QS 2020 Results

Taking as reference the top one thousand universities in the QS 2020 Ranking (published in June 2019), 46 are German, 34 Italian, 31 French and 27 Spanish. The situation changes on analysing the ranking of the Top 200 universities: 12 are German, 5 French and only 3 Italian and 3 Spanish:

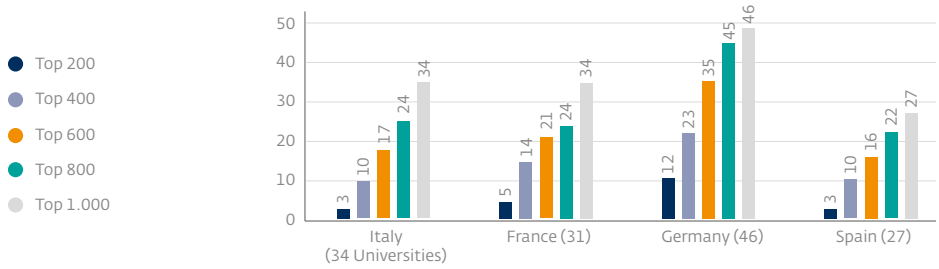


fig. 3.1 Cumulative number of institutions by placement range in the QS 2020 ranking

The result represented in Figure 3.1 is obviously obtained by weighting different elements that make up the final score of the ranking. By carrying out the same calculation on the single indicators making up the final score as on the number of universities ranked among the Top 1000, interesting points of comparison emerge between different university systems. In particular, it is worth-while to dwell on two aspects that follow opposing trends and that profoundly characterize the Italian university system compared to others: the good results in research and the poorer results in training.

If we especially focus on the number of universities in each placement range relatively to the "Faculty-Student Ratio" indicator, it becomes evident that the faculties of Italian universities are understaffed compared to those of the other university systems considered in the comparison.

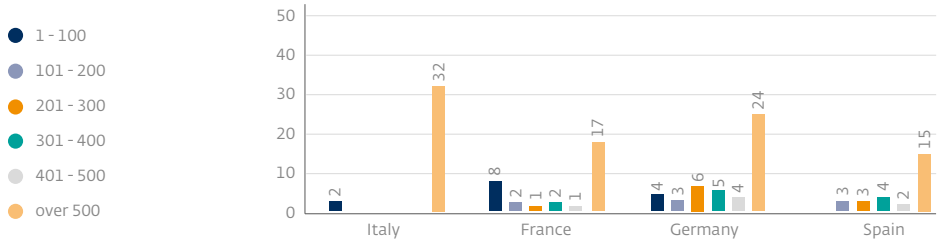
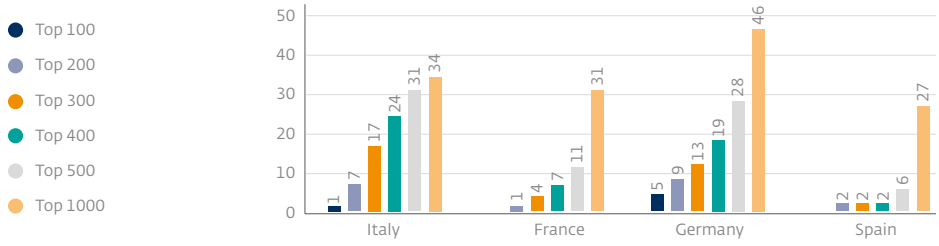


fig. 3.2 : Number of universities by placement range in the faculty-student ratio

Almost all the Italian universities taken into consideration (32 out of 34) classify in the 500th place or lower in the Faculty-Student Ratio. It is undoubtedly the worst result among the university systems analysed and an aspect that is proof of a great criticality. A similar performance can be found on the indicators that measure the capacity of attracting international students and faculty: for both these indicators, 31 out of 34 Italian universities classify in the 500th place or lower, thus recording the worst result compared to France, Germany and Spain.

Speaking of dichotomous trends, the placements are very different in respect of the indicator on citations. QS's "Citations" is a bibliometric indicator that draws information from Elsevier's Scopus database, establishing a ratio between the number of citations found online (after performing a considerable number of standardisation processes by subject) and the number of the same university's faculty members.

fig. 3.3 Cumulative number of institutions by placement range in the Citations-Faculty ratio



he picture portrayed in Figure 3.3 is very different from that set forth in Figure 3.2. Up to 17 Italian universities are in the QS's Top 300 in terms of the citation indicator, well ahead of the other three university systems.

An analysis of the THE 2020 ranking (published in September 2019) shows analogies with the QS ranking system examined up to now. Also, in this case, Italian universities stand out for their research capacity, with a high number of per capita citations but with lower performances in the training indicators compared to our European competitors.

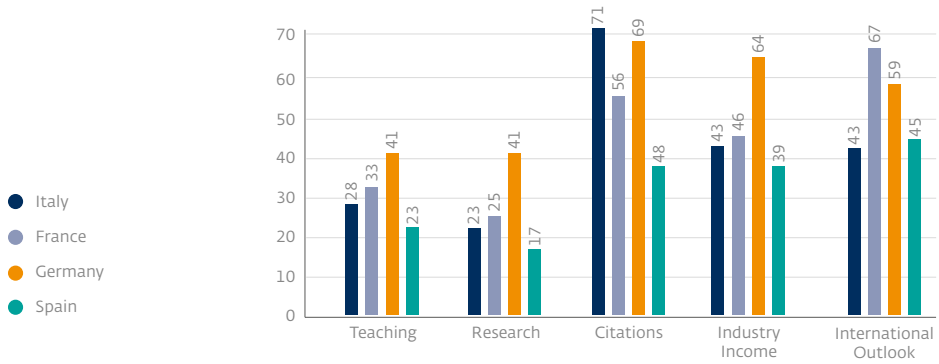


fig. 3.4 Universities' average score in the five "pillars" of the THE ranking

A high average score in the "citations" indicator counterbalances a very low average score in the "Teaching" pillar's reputational and quantitative indicators. Even if the placement changes, the trend appears to be very similar.

3.3 Beyond rankings: University education in OECD data

On analysing the results of Italian universities in the two major international rankings, we see a university system very much dedicated to research and with teaching results lower than in other major EU countries but that, overall, does not make Italy look bad compared to other university systems. Table 3.3, which summarizes the THE 2020 results,

sums up the following concept: Italy is the fifth-ranking nation for number of universities in the Top 1000, right behind university systems that are very different from ours in terms of size and socio-economic context.

	NUMBERS OF UNIVERSITIES						FOR 100 OF THE NATION'S UNIVERSITIES					
	1-200	201-400	401-600	601-800	801-1000	TOT	1-200	201-400	401-600	601-800	801-1000	TOT
United States	60	43	30	25	9	167	36	26	18	15	5	100
United Kingdom	28	20	16	14	16	94	30	21	17	15	17	100
China	7	6	14	15	28	70	10	9	20	21	40	100
Germany	23	16	5	3	1	48	48	33	10	6	2	100
Italy	3	11	23	8		45	7	24	51	18	0	100
Japan	2	5	8	10	18	43	5	12	19	23	42	100
Spain	2	3	4	13	18	40	5	8	10	33	45	100
India		3	6	14	13	36	0	8	17	39	36	100
France	5	8	10	12	1	36	14	22	28	33	3	100
Australia	11	16	4	4		35	31	46	11	11		100

Tab. 3.3 Ranking THE 2020: prime 10 nazioni per numero di atenei nella top 1000

But how can we delve deeper into comparing data on the criticalities in teaching? Answering this question entails the need to overcome the exclusively commercial limits of international rankings. In this sense, a viable approach is to draw from the large amount of public information made available by the OECD on its dedicated website[13]: which makes it easy to browse through and process. This source assures a wide range of comparison options on a multitude of aspects relative to the realm of teaching, with relevant time series offering the possibility to make comparisons between all the member States of the Organisation for Economic Co-operation and Development. Among all the variables present, we chose the ones more closely related to the realm of teaching in general and to university education in particular and more specifically:

13. https://data.oecd.org/

1 NEETs, aged 15-29 (%)
2 Secondary school teachers[14] aged < 40 (%)
3 Tertiary education teachers[15] aged < 50 (%)
4 Per capita GDP ($)
5 17-year-olds enrolled in secondary school (%)
6 18-year-olds enrolled in tertiary education (%)
7 25-34-year-old university graduates (%)
8 25-64-year-olds with doctoral degrees (%)
9 25-64-year-olds with a secondary school diploma (%)
10 Students per tertiary education teacher
11 Public education spending on public and private schools (%)
12 Expenditure per primary and secondary student ($)
13 Expenditure per tertiary student ($)
14 Expenditure for primary and secondary education (% GDP)
15 Expenditure for tertiary education (% GDP)

Most of the European countries that are members of the OECD have available data for 2018 or 2019, except for the per capita GDP (variable 4), expenditure per student (variables 12 and 13) and the % of GDP for education spending (variables 14 and 15), whose data almost always refer to 2015. We collected the most recent data for every State starting from 2010 (Table 3.5 also indicates the year of reference of all the data). The above 15 variables all have a "positive" value (in the sense that a high value is generally pursued) except for the NEET youths (variable 1) and the number of students per teacher (variable 10), for which a small number is desirable[16].

The results show that, to a certain extent, classifying States according to these 15 variables mirrors their geographical location. In fact, the 25 States for which complete data are available were grouped through a *cluster analysis*: it is a descriptive technique that groups together objects on the basis of their "comprehensive similarity" evaluated through a series of variables[17]. Through this analysis (for the results, see Table 3.4), it is possible to outline three groups of States:

14. "Secondary" refers to secondary school level (just under university level).

15. "Tertiary" refers to the tertiary level of education (university level).

16. To attribute a positive value to the variable "Public education spending on public and private schools" is arguable. In this report we have considered it to be a positive variable because it is generally favourable when associated with the other variables taken into consideration except for No. 1 and 10, which have been given a negative value.

17. The analysis cluster is linked to the metrics used to evaluate the degree of difference and the number of groups that define the ranking. Thus, the elements belonging to the same cluster can be considered to be homogeneous according to the method used. In our case, the 25 Countries were classified in 7 groups through the Ward method which is based on the Euclidean distance between the 11 variables 1, 2, 4, 6, 7, 9, 10, 11, 13, 14 and 15, each one of which is standardised in the arithmetic mean. For the purpose of uniformity, the presence of the "NEETs, aged 15-29" variable in the procedure was replaced with the complementary "presence of non-NEET 15-29-year-olds" and the number of "students per teacher" was replaced by the reciprocal (teachers per student).

- 8 North-Western European and Scandinavian Countries – France, Germany, Belgium, The Netherlands, Norway, Sweden, Finland and Denmark, in addition to Austria and Slovakia. This group is the one with the best results. This group, limitedly to the variables for which data are available, may also include Switzerland and Iceland;
- 7 Central and Eastern European and Baltic Countries: Czech Republic, Poland, Hungary, Slovenia, Estonia, Latvia and Lithuania. This group comprehensively represents intermediate situations among the 25 European States taken into consideration;
- 4 Southern European Countries – Italy, Spain, Portugal and Greece. In this group the variables generally obtain a score moderately below the average.

Moreover, there are four Countries – Great Britain, Ireland, Luxembourg and Turkey – that are clearly different from all the rest (Turkey is the country with poorest overall results).

Evaluated against the average value of the States with available data, Italy especially differs from the rest in the variable relative to the 15-29-year-old NEETs (which scores higher in our Country), the age of teachers in upper secondary and tertiary education (with less young teachers), the percentage of people with university degrees or upper secondary school diplomas out of the population (lower in Italy), the number of students per teacher (higher) in tertiary education and the expenditure of public funds for university education (lower). Italy is in line with European average values only in the percentage of 17-year-olds enrolled in secondary schools and of 18-year-olds in tertiary education. Spain belongs to the same group as Italy but generally scores "better" than our Country (less NEETs, more university teachers under 50 years of age, a higher percentage of university graduates out of the general population and fewer students per teacher in tertiary education).

We thought it would be interesting to also explore the relationship between these 15 parameters (in this case too, limitedly to OECD member Countries with available data). In

order to interpret linear correlation coefficients, it should be kept in mind that the unit analysed is the single State and therefore statistical associations apply at aggregate level and not for the single individuals in a population. For example, it could be inferred that States with fewer teachers per student in tertiary education tend to account for a larger number of young NEETs. This should not lead us to draw conclusions on single European 15-29-year-olds – as we would incur the methodological error of *ecological fallacy* – by stating, for example, that if a student shares a teacher with a large number of classmates, he/she is more likely to become a NEET. Moreover, it should be noted that, in this case, the linear correlation coefficients show some measure of statistical association (calculated at aggregate level) without this indicating a causal link: *covariation* but not *causation*.

In Table 3.6 below, the colour orange represents the positive correlations (and the intensity of the colour represents the strength of the correlation), while the light blue highlights the negative correlations. In the case of the two negative variables – "presence of NEETs aged 15-29 (%)" and "number of students per tertiary education teacher" – the colour shading is inverted, with a view to facilitating the interpretation of the phenomena.

Moreover, allow us to point out some aggregate correlations that appear to be interesting:

- A lower number of NEETs aged 15-29 is prevalently associated with the spread of education within the population;
- Countries with a high per capita GDP tend to have a high percentage of the population with tertiary education while there is no relevant correlation with the percentage of the population with at least upper secondary education;
- The Country's per capita GDP is strongly correlated ($r > 0,8$) with the expenditure per student in each of the three levels of education.

Tab. 3.4 Variables considered; results of the latest available data per single State

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COUNTRY	CLUSTER	NEET AGED 15-29 (%)	SECONDARY TEACHERS AGED < 40 (%)	TERTIARY TEACHERS AGED < 50 (%)	PER CAPITA GDP ($)	17-YR-OLDS ENROLLED IN SECONDARY SCHOOL (%)	18-YR-OLDS ENROLLED IN TERTIARY EDUCATION (%)	25-34-AGED UNIVERSITY GRADUATES (%)	AGED 25-64 WITH TERTIARY EDUCATION DEGREE (%)	AGED 25-64 WITH AT LEAST UPPER SECONDARY EDUCATION (%)	STUDENTS PER TERTIARY TEACHER	PUBLIC EDUCATION EXPENDITURE FOR PUBLIC AND PRIVATE SCHOOLS (%)	EXPENDITURE PER PRIMARY AND SECONDARY STUDENT ($)	EXPENDITURE PER TERTIARY STUDENT ($)	EXPENDITURE FOR PRIMARY AND SECONDARY EDUCATION (% GDP)	EXPENDITURE FOR TERTIARY EDUCATION (% GDP)
AUT	A	10,4	28,7	60,6	59.120	87,3	73,3	40,5	33,8	85,6	13,8	93,8	13.931	17.555	3,1	1,7
BEL	A	12,6	44,0	-	54.545	98,6	91,2	47,4	40,7	78,7	21,0	85,4	11.856	17.320	4,3	1,5
DEU	A	9,2	32,2	73,1	56.079	91,9	80,1	32,3	29,9	86,7	12,0	84,4	10.863	17.036	3,0	1,2
DNK	A	11,6	32,3	62,0	59.646	91,0	86,0	44,8	40,4	81,6	15,6	94,7	12.827	15.626	4,8	1,7
FIN	A	11,0	28,4	52,1	51.414	96,1	95,3	41,3	45,9	90,3	15,3	96,5	10.025	17.591	4,0	1,7
FRA	A	15,4	33,9	-	49.145	93,0	80,3	46,9	37,9	80,4	16,8	79,3	9.897	16.145	3,7	1,5
NLD	A	6,9	36,7	67,3	59.512	96,7	87,9	47,6	40,4	79,6	14,6	69,8	10.960	19.286	3,6	1,7
NOR	A	7,9	35,2	64,2	66.831	93,3	90,6	48,2	44,1	82,5	9,4	96,0	14.353	20.973	4,6	1,7
SVK	A	13,3	36,5	56,6	34.183	88,4	82,7	37,2	25,8	91,2	11,4	79,9	6.747	15.874	2,9	1,6
SWE	A	7,0	28,4	56,3	55.850	100,0	100,0	47,5	44,0	83,6	10,1	88,3	11.052	24.417	3,6	1,6
CZE	B	9,8	26,2	-	43.301	95,2	88,5	33,3	24,2	93,8	15,0	76,7	7.075	10.891	2,6	1,2
EST	B	10,4	24,2	60,7	38.864	93,7	89,4	43,6	41,4	90,1	12,8	74,8	6.663	12.867	3,0	1,8
HUN	B	13,3	23,8	59,8	33.975	86,8	76,1	30,6	26,0	85,0	11,5	62,9	5.852	8.761	2,9	0,9
LTU	B	11,3	19,1	61,5	38.136	98,9	95,2	55,6	43,1	93,3	14,4	74,2	5.292	9.657	2,4	1,5
LVA	B	10,0	22,0	54,0	32.194	96,0	92,0	41,6	35,7	88,4	16,3	76,3	6.824	10.137	3,3	1,5
POL	B	12,5	30,0	-	33.844	95,7	95,4	43,5	32,0	92,6	13,8	83,0	6.725	9.687	3,2	1,4
SVN	B	9,4	31,3	47,4	40.640	97,0	93,1	40,7	33,3	88,8	14,4	86,5	8.406	10.208	3,3	1,0
ESP	C	18,3	25,5	55,8	42.193	90,2	80,0	44,3	38,6	61,3	12,3	67,6	8.189	12.605	3,1	1,3
GRC	C	19,6	11,7	53,4	31.413	93,4	73,2	42,8	31,9	74,0	44,5	86,4	6.191	4.095	2,9	1,0
ITA	C	23,7	14,0	44,4	44.140	91,7	84,2	27,7	19,6	62,2	20,3	63,6	8.996	11.257	3,0	0,9
PRT	C	11,5	17,9	55,5	36.411	98,0	80,6	35,1	26,3	52,2	14,3	64,8	8.533	11.766	3,9	1,3
GBR	D	12,3	51,4	59,7	48.745	92,3	68,9	50,8	47,2	80,1	15,4	25,9	11.028	26.320	4,4	1,9
IRL	E	11,0	44,2	70,5	88.496	96,0	86,2	56,2	47,3	83,7	20,4	73,6	8.671	13.229	2,7	0,8
LUX	F	5,5	46,4	86,7	120.980	81,4	70,0	54,8	51,6	75,1	4,4	95,6	20.451	48.907	2,9	0,5
TUR	G	28,8	60,9	80,7	28.270	81,3	48,5	33,3	22,0	41,7	25,1	75,0	3.715	8.901	3,1	1,7

Tab. 3.5 Variables considered: year of last available data per single State

COUNTRY	CLUSTER	NEET AGED 15-29 (%)	SECONDARY TEACHERS AGED < 40 (%)	TERTIARY TEACHERS AGED < 50 (%)	PER CAPITA GDP ($)	17-YR-OLDS ENROLLED IN SECONDARY SCHOOL (%)	18-YR-OLDS ENROLLED IN TERTIARY EDUCATION (%)	25-34-AGED UNIVERSITY GRADUATES (%)	AGED 25-64 WITH TERTIARY EDUCATION DEGREE (%)	AGED 25-64 WITH AT LEAST UPPER SECONDARY EDUCATION (%)	STUDENTS PER TERTIARY TEACHER	PUBLIC EDUCATION EXPENDITURE FOR PUBLIC AND PRIVATE SCHOOLS (%)	EXPENDITURE PER PRIMARY AND SECONDARY STUDENT ($)	EXPENDITURE PER TERTIARY STUDENT ($)	EXPENDITURE FOR PRIMARY AND SECONDARY EDUCATION (% GDP)	EXPENDITURE FOR TERTIARY EDUCATION (% GDP)
AUT	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
BEL	A	2019	2018	-	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
DEU	A	2018	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
DNK	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2014	2014	2014	2014	2014
FIN	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
FRA	A	2019	2018	-	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
NLD	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
NOR	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
SVK	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
SWE	A	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
CZE	B	2019	2018	-	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
EST	B	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
HUN	B	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
LTU	B	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
LVA	B	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
POL	B	2019	2018	-	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
SVN	B	2019	2017	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
ESP	C	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
GRC	C	2019	2018	2018	2019	2018	2018	2018	2019	2019	2014	2015	2015	2015	2015	2015
ITA	C	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
PRT	C	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
GBR	D	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
IRL	E	2019	2018	2013	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
LUX	F	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015
TUR	G	2019	2018	2018	2019	2018	2018	2018	2019	2019	2018	2015	2015	2015	2015	2015

Tab. 3.6 Correlation index of the 15 variables considered

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		NEETS AGED 15-29 (%)	SECONDARY SCHOOL TEACHERS AGED < 40 (%)	TERTIARY TEACHERS AGED < 50 (%)	PER CAPITA GDP ($)	17-YR-OLDS ENROLLED ON SECONDARY SCHOOLS (%)	18-YR-OLDS ENROLLED IN TERTIARY EDUCATION (%)	UNIVERSITY GRADUATES AGED 25-34 (%)	TERTIARY GRADUATES AGED 25-64 (%)	25-64-YR-OLDS WIDTH AT LEAST A SECONDARY DIPLOMA (%)	STUDENTS PER TERTIARY TEACHER	PUBLIC EDUCATION EXPENDITU RE FOR PUBLIC AND PRIVATE SCHOOLS (%)	EXPENDITU RE PER PRIMARY AND SECONDARY SCHOOL STUDENT ($)	EXPENDITU RE PER PRIMARY AND SECONDARY SCHOOL STUDENT ($)	EXPENDITU RE FOR PRIMARY AND SECONDARY EDUCATION (% GDP)	EXPENDITU RE FOR TERTIARY EDUCATION (% GDP)
1	NEETS AGED 15-29 (%)	-	0,03	-0,07	-0,51	-0,31	-0,54	-0,42	-0,54	-0,63	0,60	-0,29	-0,54	-0,48	-0,25	-0,3
2	SECONDARY SCHOOL TEACHERS AGED < 40 (%)	0,03	-	0,68	0,39	-0,41	-0,46	0,30	0,29	-0,18	-0,17	-0,09	0,27	0,46	0,25	0,18
3	TERTIERY TEACHERS AGED < 50 (%)	-0,07	0,68	-	0,54	-0,51	-0,51	0,17	0,15	-0,23	-0,18	0,17	0,28	0,48	-0,07	-0,09
4	PER CAPITA GDP ($)	-0,51	0,39	0,54	-	-0,21	-0,02	0,42	0,50	0,05	-0,35	0,35	0,85	0,82	0,22	-0,31
5	17-YR-OLDS ENROLLED IN SECONDARY SCHOOLS (%)	-0,31	-0,41	-0,51	-0,21	-	0,79	0,13	0,10	0,33	0,09	-0,04	-0,18	-0,27	0,14	0,23
6	18-YR-OLDS ENROLLED IN TERTIERY EDUCATION (%)	-0,54	-0,46	-0,51	-0,02	0,79	-	0,20	0,24	0,62	-0,28	0,28	0,01	-0,11	0,12	0,12
7	UNIVERSITY GRADUATES AGED 25-34 (%)	-0,42	0,30	0,17	0,42	0,13	0,20	-	0,92	0,34	-0,15	0,01	0,27	0,35	0,01	0,02
8	TERTIERY GRADUATES AGED 25-64 (%)	-0,54	0,29	0,15	0,50	0,10	0,24	0,92	-	0,38	-0,29	0,08	0,41	0,47	0,17	0,08
9	25-64-YR-OLDS WITH AT LEAST A SECONDARY DIPLOMA (%)	-0,63	-0,18	-0,23	0,05	0,33	0,62	0,34	0,38	-	-0,31	0,19	0,04	0,03	-0,17	0,08
10	STUDENTS PER TERTIARY TEACHER	-0,60	-0,17	-0,18	-0,35	0,09	-0,28	-0,15	-0,29	-0,31	-	-0,04	-0,39	-0,52	-0,08	-0,08
11	PUBLIC EDUCATION EXPENDITURE FOR PUBLIC AND PRIVATE SCHOOLS (%)	-0,29	-0,09	0,17	0,85	-0,04	0,28	0,01	0,08	0,19	-0,04	-	0,39	0,15	0,17	-0,04
12	EXPENDITURE PER PRIMARY AND SECONDARY SCHOOL STUDENT ($)	-0,54	0,27	0,28	0,85	-0,18	0,01	0,27	0,41	0,04	-0,39	0,39	-	0,85	0,50	-0,07
13	EXPENDITURE PER TERTIERY CYCLE STUDENT ($)	-0,48	0,46	0,48	0,82	0,27	-0,11	0,35	0,47	0,03	-0,52	0,15	0,85	-	0,27	-0,07
14	EXPENDITURE FOR PRIMARY AND SECONDARY EDUCATION (% GDP)	-0,25	0,25	-0,07	0,22	0,14	0,12	0,01	0,17	-0,17	-0,08	0,17	0,50	0,27	-	0,47
15	EXPENDITUR FOR TERTIARY EDUCATION (% GDP)	0,03	0,18	-0,09	-0,31	0,23	0,12	0,02	0,08	0,08	-0,08	-0,04	-0,07	-0,07	0,47	-

3.4 Considerations on the data

Notwithstanding all the limits due to the methodologies used and the commercial dissemination of the information gathered, international university rankings constitute a useful albeit basic term of comparison between different national university education institutions. Nonetheless, rankings do not fulfil the need for information that is instrumental to achieving a full comparison and do not go beyond providing a summary indication of the analytical approaches that must subsequently be implemented with other instruments. This is precisely what we have attempted to do with these analyses: detect the gap with other European systems in the results of university education in international rankings and further explore some aspects with the "tool-kit" provided by the OECD's computer databases.

If it is true that Italian university research is in good health and continues to make the Country competitive at international level (perhaps this aspect would deserve an in-depth analysis also in view of the peculiarity of a "concentrated" university system as is the Italian – see Table 3.1 – and therefore perhaps liable to being positively affected by the economies of scale connected to investment in research), university education instead suffers the effects of an understaffed and aging faculty, a progressive drop in public investments in education and, at the end of the day, a high social cost in terms of NEETs and an economic cost in terms of a loss in GDP.

4. Non-binding indications by the working group

Ever since it was established, the CRUI Working Group chose to take a pragmatic and operational approach to the international rankings considered to be the most important by the media but not only those; it also decided to include the World University Rankings produced by Quacquarelli Symonds and by Times Higher Education, as well as Greenmetric by the Universitas Indonesia and the U-Multirank initiative.

In all the above-listed cases, the method adopted was to collect the data provided by universities to the ranking agencies in 2017, referred to solar year 2016, and to academic year 2015-2016. Through a comparison between the data and other information collected, we singled out the most recurring data aggregation methods as well as the most frequent distortions in interpreting the definitions laid down in the agencies' own guidelines. This was the reason for developing the so-called "non-binding indications" of the Working Group which are aimed at providing a common semantic interpretation of several categories of data while taking into consideration the Italian academic context.

4.1 QS

QS survey card

Between 29 November 2017 and 15 December 2017, the Working Group developed a survey card on the data submitted to QS and THE. The declared aim of the survey was to provide operational indications for data entry for both of the rankings in 2018. In order to simplify the response procedure, a card was attached with the data relative to the University of Bologna, which was to pave the way towards sharing and transparency. The Working Group's proposal was endorsed by 28 universities. The data requested are exemplified in the following table:

Tab. 4.1 WG survey card 2017 for the Students and Academic Staff categories of the QS World University Rankings

QS WUR: TIPOLOGIE STUDENTS

Cycle I	Cycle II	CU	PhD	Specialisation	Master I	Master II	Summer school	Erasmus	Foreign nationality	Foreign CV

QS WUR: TIPOLOGIE ACADEMIC STAFF

Full professors	Associate professors	Fixed-term Professors	Researchers	Type A Researchers	Type B	Post Docs	Language lecturers

More specifically, the aim of the survey was not only to collect the overall number of Students and Academic Staff as much as to analyse what elements were used to aggregate the data. Additional information requested for the types of Students concerned their attendance: "regular", "not regular", "part-time" and "full-time". The Working Group defined as "regular" the students who attended university for a number of years that were less or equal to the legal duration of the course.

For the types of Academic Staff, the universities were asked what were the coefficients used to calculate the Full Time Equivalent.

Indications for the QS World University Rankings (QS WUR)

The Working Group tried to identify a univocal non-binding proposal by following some basic principles:

1. Full compliance with the QS guidelines, adopting choices already validated in the previous editions;
2. The data should be essential and easy to find so as to minimise the impact on offices and on the human resources in charge of submitting them;
3. The data describing Italian universities in an international scenario should be consistent, justifiably dampening any possible specificity of the university system.

The Working Group carried out an in-depth analysis of the combined effect of the "citations-faculty" and "faculty-students" indicators, each of which weighs for 20% of the calculation of the weighted average of the QS ranking's six indicators. This analysis made it possible to validate the appropriateness of the decisions made by following the three principles listed above. The same analysis also promoted a widespread debate on the "distorting" effect of using the "faculty-students" indicator in the Italian context.

In calculating the total **Faculty** for QS, in concert with the choice made by 72% of the 28 universities, we decided not to count the Fixed-Term Professors because their main activity is teaching and not bibliographical production.

The following Table exemplifies some of the Working Group's suggestions:

POSITIONS	TIME COMMITMENT	FTE COEFFICIENT
Researchers on allowance (with at least a 3-month contract)		0,5
Full professors	Definite Time	0,7
	Full Time	1
Associate professors	Definite Time	0,7
	Full Time	1
Native language collaborators and linguistic experts	Full Time	1
	Definite Time	1
Researchers	Definite Time	0,5
	Full Time	1
Type-A Researchers	Definite Time	0,5
	Full Time	0,5-1
Type-A Researchers	Full Time	1
	Definite Time	0,5
Fixed-term professors		0

Tab. 4.2 Academic Staff Profiling for the QS WUR ranking

As for the **Students** category, the analysis of the faculty-students indicator and of the choices most commonly made by universities led us to consider as forming this category only the regular students attending the three-year courses of study, the second-cycle and single-cycle degree programmes and doctoral programmes. We decided not to consider students lagging behind in their studies, part-time students attending the three-year courses of study, the second-cycle and single-cycle degree programmes, students attending specialisation programmes and Summer School. In particular, the decision to exclude students that are not regular – unfortunately a characteristic feature of Italian universities – appeared to be justified by their lower use of university resources, both facilities and the faculty.

QS WUR 2018-2020 Results: Italy

The non-binding indications for QS only partially affected the results, considering that their impact is mainly restricted to calculating the "citations-faculty" and "faculty-students"

indicators. As is well-known, the indicators that carry most weight are the reputational indicators in relation to which the Working Group only presented case studies. As for the increase in the number of Italian universities in the QS WUR ranking before and after establishing the Working Group, there has been a constant albeit slight growth which is nonetheless significant if set against the very small number of new entries in three consecutive editions of the QS top 1000:

	QS WUR 2019 (RELEASED IN 2018)	QS WUR 2020 (RELEASED IN 2019)	QS WUR 2021 (RELEASED IN 2020)
Italian universities	30	34	36
Italian new entries		4	6
Overall new entries	60	50	47

Tab. 4.3 Italian universities present in the QS WUR 2019-2021 rankings

At the beginning of 2019, in order to meet the target, the CRUI Working Group agreed on a fast-track WUR 2020 admission procedure with the QS Intelligence Unit. The procedure envisaged the submission of documents proving the university's possession of the admission prerequisites[18]. 15 universities used the fast-track and 4 of these achieved the goal of being included in the ranking: Parma, Polytechnic of Bari, Salerno and Udine.

18. The first step in order to be considered: be present in at least 2 QS disciplinary macro-areas; offer undergraduate and post-graduate training courses; the second step to be ranked: number of publications in the Scopus database; nominations in the QS reputational surveys.

The Working Group's second priority is to help Italian Universities climb the rankings. Taking the QS WUR Top 200 as reference, we witnessed an alternation of universities and substantial upgrades in the rankings:

Tab. 4.4 Italian universities in the top 200 QS WUR 2019-2021

	QS WUR 2019 (RELEASED IN 2018)		QS WUR 2020 (RELEASED IN 2019)		QS WUR 2021 (RELEASED IN 2020)	
	4		2		3	
I	PoliMI	156	PoliMi	149	PoliMI	137
II	Sant'Anna Pisa	167	UniBo	177	UniBO	160
III	Normale Pisa	175			Sapienza	171
IV	UniBo	180				

If we compare the last two editions of the QS ranking, the activities promoted by the CRUI Working Group could have facilitated a significant improvement in the overall score of 30 universities:

Tab. 4.5 Comparison between the overall score of QS WUR 2021-2020 universities and "CRUI WG universities"

OVERALL SCORE OF THE CRUI WORKING GROUP UNIVERSITIES	
▲	30
▼	5
	Variation +25

For 16 of these, the better Overall Score translated into an upgrade in the ranking:

Tab. 4.6 Comparison between the ranking of QS WUR 2021-2020 universities and "CRUI WG universities"

UNIVERSITIES IN THE CRUI WORKING GROUP	
▲	16
▼	3
◀ ▶	16
	Variation +13

4.2 Times Higher Education

The Working Group also regularly analysed other QS rankings, without however providing operational indications: QS Rankings by Subjects and QS Employability Rankings.

Survey card

Tab. 4.7 WG 2017 Survey card for the Students and Academic-Research Staff categories for THE WUR

35 universities of the CRUI WG filled out the WG survey card on the 2017 edition of the Times Higher Education World University Rankings. The data requested are exemplified on the Table below:

THE WUR: TYPES OF STUDENTS

Cycle I	Cycle II	CU	PhD	Specialisation	Master I	Master II	Summer school	Erasmus	Foreign nationality	Foreign CV

THE WUR: TYPES OF ACADEMIC /RESEARCH STAFF

Academic Staff	Full professors	Associate professors	Researchers	Type A Researchers	Type B Researchers	Fixed-term professors	Post Docs	Language lecturers
Research Staff	Full professors	Associate professors	Researchers	Type A Researchers	Type B Researchers	Fixed-term professors	Post Docs	Language lecturers

As with the QS ranking, the additional information collected for the THE **Students** category concerned the students' attendance mode: "regular", "not regular", "part-time" and "full-time". The universities were also asked to specify the way of calculating 1st cycle, 2nd cycle and CU graduates, while also analysing other types of students such as PhD students, and students in Specialisation Schools, Master's courses and Summer Schools. Lastly, the composition of other parameters was analysed such as "Income total", "Income Research" and "Income Research Industry". Once again, the terms of comparison were the elements making up the data more than its numerical relevance.

Indications for the THE World University Rankings (THE WUR)

Spurred by the THE WUR's distinction between Academic Staff and Research Staff, the CRUI WG suggested to only include the Post Docs in the **Research** category, as this was in line with the choice made by 79% of respondent universities even if the 2017 edition of the British ranking showed that 40% of the universities had also taken into consideration Type-A and Type-B researchers. Since the denominator of the Publications per academic staff indicator is the sum of the Academic and Research Staff, it proved to be preferable to limit – to the extent possible and compatibly with the context of single universities – the total Research staff. The Table below shows the profiling of the **Academic Staff** category also suggested to QS which, it should be noted, does not include fixed-term professors:

Tab. 4.8 Academic Staff Profiling for the THE WUR ranking

ACADEMIC STAFF - POSITIONS	TIME COMMITMENT	SUGGESTED COEFFICIENT
Full professors	Definite time	0.5-0.7
	Full time	1
Associate professors	Definite time	0.5-0.7
	Full time	1
Researchers	Definite time	0.5
	Full time	1
Type-A researchers	Definite time	0.5
	Full time	1

ACADEMIC STAFF - POSITIONS	TIME COMMITMENT	SUGGESTED COEFFICIENT
Type-B researchers	Definite time	0,5
	Full time	1
Native language collaborators and linguistic experts (optional)	Definite time	0.7
	Full time	1

In line with the analyses submitted to QS, here again the choice to minimise the number of students by excluding the students lagging behind in their studies, did not appear to be penalising. It is nonetheless important to reaffirm that these choices had a limited impact on the overall score.

Tab. 4.9 Profiling of Students for the THE WUR ranking

The Table below summarises the non-binding indications for the **Students** category:

STUDENTS	TIME COMMITMENT	SUGGESTED COEFFICIENT
1st Cycle	Full time	1
2nd Cycle	Full time	1
Single cycle	Full time	1
Doctorate	Full time	1
1st level Master (optional)	Full time	1
2nd level Master	Full time	1
Specialisation schools (optional)	Full time	1

As for university graduates, the WG attempted to dispel any doubt by suggesting to only consider 1st cycle students for the THE *Undergraduate degrees awarded*, while for the Doctorate degrees awarded, it suggested to include students with a second-cycle qualification and second-level Master's degree, insofar as the THE makes reference to UNESCO's ISCED 2011 Level 8 (Doctoral or equivalent level).

THE WUR 2018-2020 Results: Italy

Generally speaking, the Times ranking is more inclusive than the QS, having published 1500 universities in its last edition instead of its customary 1000. Before the establishment of the WG, the Italian universities included were 40 but, after the launch of the THE WUR 2019, we are witnessing a constant up-trend:

	THE WUR 2019 (RELEASED IN 2018)	QS WUR 2020 (RELEASED IN 2019)	QS WUR 2021 (RELEASED IN 2020)
Italian universities	43	45	49
Italian new entries	3	2	6
Removals	0	0	2

Tab. 4.10 Italian universities present in the THE WUR 2019-2021 rankings

The presence of three Italian universities in the Top 200 is consolidated even if it is still far from the goal of entering the Top 100 ranking:

	QS WUR 2019 (RELEASED IN 2018)		THE WUR 2020 (RELEASED IN 2019)		THE WUR 2021 (RELEASED IN 2020)	
	3		3		3	
I	SS Sant'Anna	155	SS Sant'Anna	149	Bologna	167
II	S Normale	161	S Normale	152	SS Sant'Anna	170
III	UniBo	180	UniBo	168	S Normale	181

Tab. 4.11 Italian universities present in the THE WUR 2019-2021 rankings

4.3 U-MULTIRANK

The Working Group's guidelines for Italy

U-Multirank (henceforth UMR) is a multidimensional ranking financed by the European Commission aimed at facilitating the comparison between universities more than at producing a univocal ranking that reduces the effective complexity of a university to a single score. Respondent universities are requested to provide numerous data on teaching, research, their third mission, regional engagement and international orientation. These data form the basis for 35

indicators that measure the universities' activity in the five areas, classifying them as above or below the average of all the participants. These data create rankings that provide knowledge on the complexity of universities instead of simplifying them as is the case with the typical top *world universities* rankings, but this is precisely what makes U-Multirank less immediate and effective in terms of communication.

This particular ranking shows the universities' performance in the single aspects considered and could be used as a benchmarking instrument. However, its demanding data collection requirements has limited the participation of Italian universities up to now. With a view to increasing the inclusion of Italian universities, measured on comparable data, the CRUI Working Group attempted to facilitate the task of filling out the institutional questionnaire by publishing guidelines for Italy indicating the data corresponding to the Italian university system and the possible source thereof in compliance with the definitions set forth by UMR.

Between 2018 and 2019, the Working Group appointed a UMR Commission with members from the Universities of Bergamo, Turin and Milano Bicocca, which carried out a survey among U-Multirank participants and the CRUI WG members on the choice of methodology in filling out the 2018-19 institutional questionnaire. The choices of the 15 respondent universities were analysed and their compliance was checked against the UMR guidelines (in English), in order to detect the method most recurring or consistent with the instructions given. Then the Commission verified the availability of data in ministerial databases, as a public source was deemed to be preferable in outlining a common definition of the data to be provided (e.g., what type of students to be considered).

The "Italian" definition of the data requested was debated within the CRUI Working Group and then reported to the UMR curators who confirmed the interpretation proposed and used the official Italian sources indicated by the Commission to extract some data for the 2019-20 questionnaire.

In the autumn of 2019, the Working Group made available the guidelines to participating universities to walk them through the current edition of the institutional questionnaire and assist them with the data collection. Moreover, for the new entries, the UMR pre-uploaded the data extracted from the National Student Register (*Anagrafe degli Studenti)* and from the Statistics Office of the Italian Ministry of Education, University and Research (MIUR) and sent them to the other universities present on the data collection platform to be used, at the discretion of the universities, to answer several questions on the questionnaire.

The guidelines for Italy contain indications for filling in all the tables in the 2020 edition of the institutional questionnaire relative to the parameters of teaching, the number of students enrolled, the number of graduates, the international orientation in teaching, the faculty, the budget, research and the third mission. For each one of the 20 tables, we have reported both the UMR official guidelines, highlighting the most important elements for Italian universities, and the non-binding guidelines proposed by the WG, which consist in providing a definition of the data requested and the source for the extraction of the data pre-uploaded by the UMR. With respect to budgetary data, the guidelines refer to the possibly relevant items in the profit and loss account adopted by State-run universities.

In addition to providing the guidelines, the UMR Commission made itself available to the WG's Italian member universities for any clarification and support from remote throughout the entire questionnaire filling period (Autumn-Winter 2019/20).

UMR 2019-2020 Results: Italy

Seeing the nature of the UMR, which is more oriented towards ranking and comparing than singling out the best performers, it comes natural to evaluate the effectiveness of the UMR Commission on the basis of participation more than positioning indicators.

From this perspective, a factor that immediately appears to be significant is the increasing number of universities surveyed in the ranking, which skyrocketed from 49 to 79 in 2020, with an increase of more than 60% (see the Table). This result is naturally explained by the fact that, thanks to the cooperation with the UMR Commission, the ranking managers were able to pre-upload some data relative to universities that stated their availability to participate in the ranking. This means that from 2020 most Italian universities are at least listed in the UMR as this ranking considers universities as participating also when they have not finished filling out all the fields.

Tab. 4.12 Participation and performance of Italian universities in the U-Multirank 2019-2020

ITALY	2019	2020
Number of Universities	49	79
Global Top 25 performers	6	4

It should also be noted that completing the list is a prerequisite for the UMR to be used effectively, enabling every university to recognise comparable universities, at least in terms of some basic dimensional data such as the number of students enrolled.

The quality of the comparison between Italian universities is corroborated through the selection of sources performed by the Commission, which made it possible to standardise the definition of the dimensional data taken into consideration. In particular, as of the year 2000, all the data relative to the students of the Italian universities listed in the UMR are drawn from the National Student Register. This is perhaps the most important result among those achieved by the UMR Commission even if its activity is only beginning and would certainly benefit from a continuous cooperation between the CRUI WG and the UMR.

In relation to the quality of the data provided by single universities, it is our opinion that homogeneity has been improved by the guidelines made available by the Commission. The interaction with a large number of universities after the guidelines

were circulated testifies to the fact that the activities carried out by the Working Group were effectively put to use by the offices of single universities in charge of uploading the data.

These offices' testimony also highlights a further result which should not be underestimated. The pre-uploading of data, compounded with the availability of the guidelines, significantly reduced the time needed to communicate to the UMR the data necessary to participate in the questionnaire, which represented one of the long-time limits of this initiative.

Regardless of the fact that, as repeatedly pointed out, the UMR should be considered more as a comparison instrument than a ranking, it is interesting to notice how, from the point of view of the results, the increase in the number of Italian universities present in the UMR did not strongly impact their performance. As the Table below shows, the Italian universities with the highest number of A-scores (the maximum score that UMR attributes to each one of the aspects evaluated) remain the same, with only a slight variation in the number of A-scores received.

Tab. 4.13 A-scores obtained by Italian universities in the U-Multirank 2019-2020

UNIVERSITIES WITH THE MAXIMUM NUMBER OF A-SCORES	TOTAL A SCORES - 2019	TOTAL A SCORES - 2020	CHANGE
Bocconi University	15	14	▼
IMT School for Advanced Studies Lucca	13	13	▲
Milan Polytechnic	11	11	◀ ▶
Free University of Bolzano	12	11	▼
Bari Polytechnic	7	10	◀ ▶
Scuola Superiore Sant'Anna University of Pisa	12	10	▼
Luiss University	8	10	▲

Now, in relation to their positioning compared to other universities present in the UMR, we can instead observe (see the following Table) that most Italian universities are positioned above the average in the categories "Teaching & Learning", "Research" and "Regional Engagement", while a below average score is attributed in "Technology Transfer"

and "International Orientation". The fact that these results (which refer to a percentage of the universities represented) are also confirmed in the ample representation of Italian universities in the UMR 2020 testifies to the level of the overall system, which was not only well represented by the 49 institutions listed in 2019, but maintains and improves its positioning also with the representation of 79 universities.

On the other hand, one of the UMR Commission's least successful results is the difficulty encountered in improving the perception of the UMR by Italian news media, which unfortunately continue to ignore this instrument. However, we are convinced that the UMR offers users an independent comparison that goes beyond the classical logic of rankings and that deserves to be supported also in view of the independent approach it guarantees.

Tab. 4.14 Italian Universities positioned above or below the average in the principal indicators of the U-Multirank 2019-2020

ITALY	2019		2020	
% OF UNIVERSITIES WITH A PERFORMANCE	BELOW AVERAGE	ABOVE AVERAGE	BELOW AVERAGE	ABOVE AVERAGE
Teaching & Learning	30	35	27	39
Research	10	71	13	69
Knowledge Transfer	40	41	54	37
International Orientation	33	45	40	33
Regional Engagement	25	51	24	55

4.4 UI GREENMETRIC

Indications for Greenmetric

In September 2017, just before the establishment of the CRUI WG, the University of Bologna assumed the task of Coordinator for Italy of the Greenmetric (GM) Network, to which all the universities that enter the Indonesian ranking dedicated to environmental sustainability every year are entitled membership. One of the tasks shouldered by the Coordinator, Prof. Mirko Degli Esposti, is the collation of the GM Questionnaires filled out by Italian universities.

Once again, the Working Group's initiative was based on the principles of transparency and reciprocity in the achievement of several goals: bring out the outlying values about which to ask for explanations from universities, propose amendments to the colleagues of the Universitas Indonesia with a view to improving the structure of the Questionnaire and lastly develop non-binding indications to be used by the Italian network in the ranking's next edition. It should be pointed out that this ex-post collection of data fills a gap repeatedly reported to Greenmetric which, for organizational reasons, is not capable of sending copies of the questionnaires filled out by the universities to national Coordinators. On the other hand, one of this ranking's most interesting features is precisely that it represents a self-evaluation instrument of the universities' "green" approach to their infrastructure, energy and water consumption, waste management, transportation, cultural events, teaching and student associations, just to mention a few of the areas taken into consideration.

The first version of the non-binding indications for GM was submitted on 21 September 2018, a date useful in order to fill out the Questionnaire by the end of October:

Tab. 4.15 List of non-binding indications for the 2018 edition of the UI Greenmetric rankings

SETTING & INFRASTRUCTURE	1.9.	Total area on campus covered in forest vegetation
	1.12	Total Number of Regular Students
	1.14	Total Number of academic and administrative staff
	1.18	Percentage of University budget for sustainability effort within a year
ENERGY AND CLIMATE CHANGE	2.2	Total main campus smart building area (m2)
WASTE	3.3	Organic waste treatment. The method of organic waste treatment in your university.
	3.6	Describe the primary method of sewerage treatment in your university.
WATER	4.1	Water conservation program implementation
	4.2	Water recycling program implementation
TRANSPORTATION	5.5	Availability of shuttles for journeys within the campus and whether the ride is free or charged.
	5.10	Average number of Zero Emission Vehicles

EDUCATION & RESEARCH	6.1	Number of courses/subjects related to sustainability offered
	6.4	Total research funds dedicated to sustainability research
	6.7	Number of scholarly publications on sustainability published
	6.8	Number of events related to sustainability

Tab. 4.16 Example of the WG's indications for Greenmetric

The aforesaid indications issue from the analysis of the questionnaires and from the implementation of some amendments. In this respect, the overall number of Students and Academic Staff provided, which is the denominator of numerous indicators, is extensive as it was deemed important to correlate the effective users/actors of the processes to the spaces available, transportation, subject matters and publications. The following shows an example of these indications:

TOTAL NUMBER OF ACADEMIC AND ADMINISTRATIVE STAFF
Please state the total number of academic staff (lectures, professors, and researchers) and administrative staff working in your university.

Points 0	Total NUmber of Academic and administrative staff
	INDICATE THE NUMBER OF GDL
For most of the items, it is preferible to report the number of teachers ad TA staff according to a broad interpretation of the LGs: Reasearchers with research allowances, Full Professors, Associate Professors, Native Language Lecures and Contractors, Researchers, Type-A Reasearchers, Type-B Researchers, plus the university's TA staff on permanent or fixed-term contracts.	
This datum is the denominator of the following items: 1.5, 2.12, 5.4, 5.11 (it could also apply to items 5.6, 5.7, 5.8)	

A second edition of the indications for Greenmetric was presented at the 11 October 2019 meeting of the CRUI Working Group, which contained a risk assessment of the items of the Questionnaire for which the evaluation grid had been changed from absolute values to percentages, with a possible fallout on the score. The third edition, presented on 23 October 2020, focused on the three new questions on the Universities' social impact and on the 11 new optional evidences introduced.

Greenmetric 2017-2019 Results

The possible effect of the Italian Network's indications is evident in the ranking's last two editions. The number of participating universities increased by 1/3 in three editions, from

22 to 29. There is also an improvement in their positioning, especially in the Top 200. The best margin of improvement is recorded in the central group (Top 300-Top 400), which lists 12-13 Italian universities in all of the three years. This increase was recorded despite the progressive rise in global universities participating in the GM ranking, which grew from 619 in 2017 to 780 in 2019.

GREENMETRIC 2017 (BEFORE THE CRUI WG)	GREENMETRIC 2018	GREENMETRIC 2019
22 Italian Universities	**27 Italian Universities**	**29 Italian Universities**
3 top 100	4 top 100	3 top 100
3 top 200	5 top 200	8 top 200
6 top 300	7 top 300	5 top 300
7 top 400	6 top 400	7 top 400
3 > top 400	5 > top 400	6> top 400

Tab. 4.17 Greenmetric Ranking 2017-2019: presence and position of Italian universities

4.5 Summary of 2017-2020 results

RANKING	ITALIAN UNIVERSITIES IN 2017 RANKINGS	ITALIAN UNIVERSITIES IN 2020 RANKINGS	ITALIAN UNIVERSITIES IN TOP 200 2017	ITALIAN UNIVERSITIES IN TOP 200 2020
ARWU	16	46	2	3
THE	39	49	2	3
QS	31	39	4	3
QS - EMPLOYABILITY	16	16	5	7
GREENMETRIC	22	29	5	11
U-MULTIRANK	49*	79	5*	7

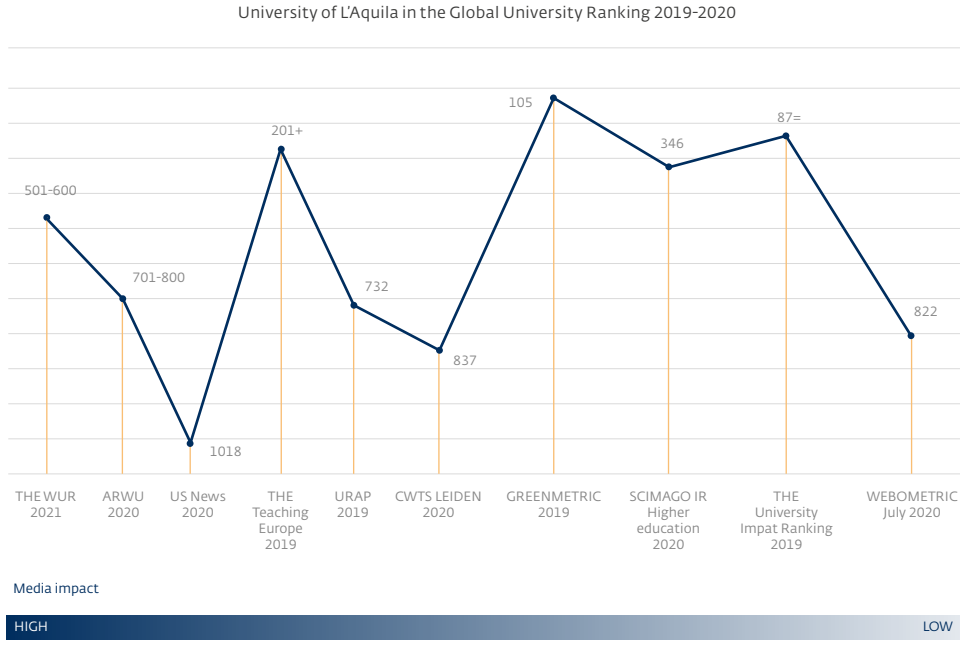
Tab. 4.18 Summary of results

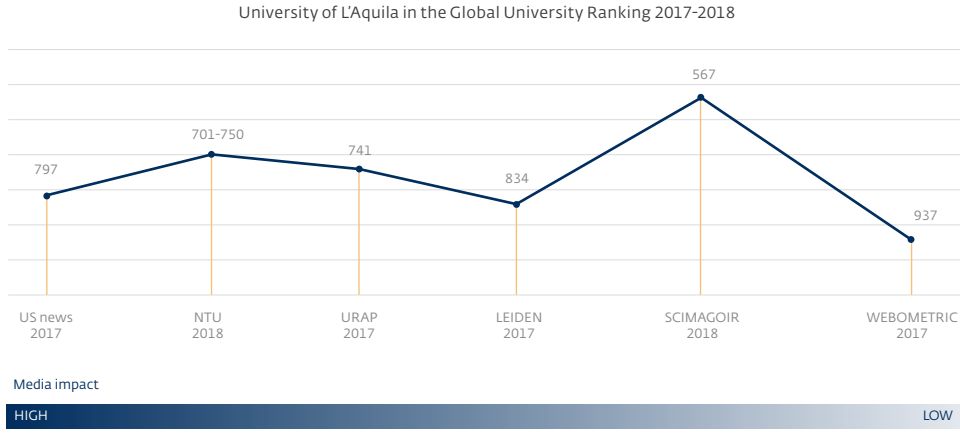
**U-Multirank's first survey refers to 2019 and not to 2017; instead of reporting the Top 200, the survey shows universities with a number of A-scores equal to or higher than 10.*

Table 5.1 shows the positioning of Italian universities in the major rankings of 2017 and 2020 (the year of reference when the survey was published). The time-frame of reference is the same as that of the CRUI Working Group on Rankings and the results highlight the first encouraging effects of exchanging good practices in managing the data for international rankings. They show an increase in the number of Italian universities surveyed in different rankings and also in the number of universities that

succeeded to be positioned in the Top 200. Obviously, many of the universities entering a ranking start off from the bottom of the scale but this is nonetheless a significant result because simply being included in the ranking often automatically means being among the top 1000 universities in the world. By way of example, the University of L'Aquila has witnessed a noticeable increase in its presence in international rankings over the last three years:

Fig. 4.1 e 4.2 The University of L'Aquila in international rankings





5. Conclusions

The CRUI Working Group's experience with international rankings: legacy and prospects

The activities carried out by the CRUI Working Group on International Rankings include:

- adopting a common definition of some categories of data (students, faculty, etc.)
- drafting guidelines for data collection and processing
- sharing procedures to update profiles and affiliations on the most popular bibliographic databases
- periodically monitoring the Italian universities' performance on leading global rankings.

The Working Group has supported its member universities by making available an easy-to-use tool-kit (analysis, guidelines, etc.) and by acting as a hub for sharing knowledge and shaping common policies and practices .Moreover, the Working Group's contribution has not been limited to the internal aspects of data analysis and processing of common methodological proposals but has assumed the role of privileged interlocutor of national news organisations and media and of the international ranking agencies themselves.

Growing media coverage and their apparently simple interpretation has turned academic rankings into a formidable communication tool, capable of comparing universities worldwide. However, their recent proliferation, sometimes compounded to a lack of clarity on the methodologies and criteria used, has risked creating a sense of ambiguity and confusion, especially among non-experts. This is the reason why, at least in the first period, the WG has deemed it appropriate to disseminate – concomitantly to the release of the most popular global rankings – a note to explain the scope, processing method and the eventual upgrading or downgrading of Italian universities, by highlighting those characteristics of the system that could result to be more or less instrumental to the ranking under examination. This activity

has also enabled journalists dealing with academic rankings on major national newspapers to make a more reliable and accurate representation of the results obtained by Italian universities in the different rankings, including, if necessary, in-depth analyses, interviews or comments by the Working Group Coordinators in their editorials. This has contributed to create a relationship of mutual trust and cooperation with the professionals of the sector who in turn actively participated and expressed their views at the meetings, workshops and conferences organized by the Working Group.[19]

As for the dialogue with the ranking agencies' managing bodies, the WG had the opportunity to acquire and elaborate on quite a lot of food for thought in relation to the methodology that emerged from internal comparisons and to submit organic and structured proposals thereon to single agencies, offering them (QS and THE) interpretations shared nationwide on the determination of data categories or alternative proposals (to Greenmetric) for the acquisition of specific types of information. The reciprocal exchanges established with the ranking agencies and the direct acquaintance of their contact persons facilitated timely feedback as doubts emerged on the interpretation of old and new rankings and also enabled the Working Group to bring to Italy the topmost executives of the ranking agencies, organising workshops dedicated to Italian universities with their respective analysts. This activity was also acknowledged at institutional level with Greenmetric's conferral of the *Most Active National Coordinator* award to Italy – and more specifically to the Alma Mater Studiorum Università di Bologna – for the commitment placed on coordinating and collecting proposals to improve the structure of the ranking. Again, at institutional level, notice should be taken of the presence of a WG representation in the QS Advisory Board and the intention of also proposing the WG's candidacy for the soon-to-be-operational Advisory Board of the THE.

From the point of view of international relations, note should be taken of the fruitful cooperation with the contact persons

19. On the relationship with the media, mention should be made, for example, of the interview with one of the Working Group Coordinators published in the "University" section of the Corriere della Sera website:

https://www.corriere.it/scuola/universita/18_aprile_05/ranking-crui-campo-cosi-atenei-italiani-avranno-migliori-voti-33bbb6c0-38b8-11e8-88e7-5b815ecb2975.shtml

and the multimedia information portal on rankings developed by the University of Turin:

https://politichediateneounito.it/it/ranking-internazionali/#ranking

The issue of relations with the media was also debated at the IREG Conference 2019

https://ireg-observatory.org/en/events/ireg-2019-conference-in-bologna-italy/

of the "International University Ranking Service Project" promoted by the German Rectors' Conference, an experience similar to that of the CRUI's Working Group which was launched in Germany in 2013 but that is more structured in terms of human and financial resources. The Project, launched with the aim of improving the overall positioning of German universities in international rankings, has already reached its third planning phase (2013-15, 2016-18, 2019-24), with 5 units (endowed with technical and administrative staffs) and two Coordinators (the Rectors of the University of Tübingen and Dresden), and has recently expanded its scope of activity by sharing analyses and recommendations (developed in the preceding phases) and by providing operational support to their implementation also through the provision of advisory services and the creation of a network of the administrative contact persons of the universities involved in the rankings. The cooperative effort realised with the German project has enabled the two groups not only to exchange opinions on data collection and submission methodologies but also on the two university systems' approach to rankings. In this context, a common stand seems to emerge on the importance of positioning in international rankings in terms of the visibility and attractiveness of national universities although, from the standpoint of German universities, the way they are perceived in the rankings does not appear to be so essential for their reputation. At institutional level, the German Government showed to be highly sensitive to the issue by financing the pilot phase of the Ranking Project through its Ministry of Foreign Affairs, which is now entirely funded by the universities participating in the Project. In addition to cooperating with its German counterpart, the CRUI Working Group on International Rankings has also established relations – either in aggregate form or through its single members – with other European universities, which has led to developing joint analyses, reports and publications as well as more structured cooperation projects.

Prospects

As we have seen in the preceding chapters, during these last three years the WG has contributed to increasing the number of Italian universities present in international rankings and boost their overall positioning also thanks to its

drafting of methodological guidelines and establishing a more closely structured dialogue with ranking agencies. With the close of 2020, we can consider the experience of the Working Group concluded as it was originally planned to come to its natural end once it achieved the targets set. The food for thought that has emerged from the exchange of views with the German experience and the strong interest shown by the members of the Working Group appear to hint at the possibility of it evolving through the development of a more structured project that could possibly be configured as a full-fledged CRUI Commission. This new phase of the initiative, through a closer cooperation with the CRUI's International Affairs Commission, could continue its effort to favour the appeal of the national university system by upgrading the overall positioning of Italian universities in international rankings; an effort that, translated at operational level, could have the following objectives:

a Updating the guidelines and recommendations for participants in the rankings;
b Periodically monitoring the results;
c Outlining a national agenda on aspects related to rankings and, more generally, to the attractiveness of the national university system;
d Interacting with international ranking agencies and with national Political and Institutional bodies.

Alongside the aforesaid objectives, the new Project could also provide to:

e Activate a network for the universities' technical and administrative staff in charge of handling rankings, which could meet 2-3 times a year for the purpose of facilitating the implementation of the recommendations and the exchange of orientations and best practices;
f Build a national database with the principal data collected and used by leading ranking agencies.

A last aspect, which was barely touched upon by the WG experience and that could be further developed in its new

phase, refers to the services offered by ranking managers in terms of both analytic and promotion and marketing instruments providing a comprehensive view of the variety of needs of Italian universities and possibly enabling us to propose to acquire them jointly.

These prospects were shared at the WG's last formal meeting of 23 October 2020 and are also supported by the results of the appreciation survey administered to WG members whereby 80% of the respondents deemed a possible future CRUI-led coordination of Italian universities on the issue of rankings to be very useful.

Conference of Italian University Rectors

CRUI Working Group on International Rankings:
activities, results and prospects

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