



Aristotle University of  
Thessaloniki

# GLOBAL RESEARCH UNIVERSITY PROFILES (GRUP)

2018 DATA REPORT ●

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# 1 Introduction

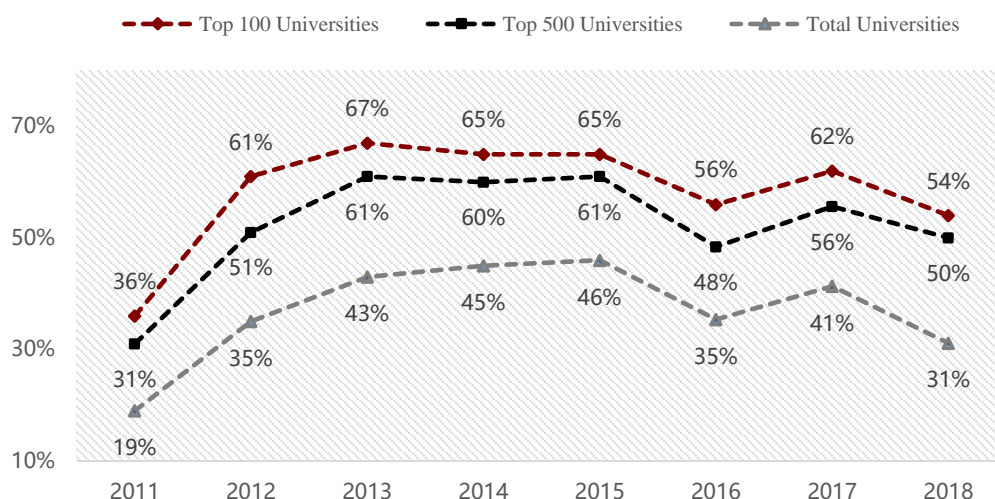
In 2003, researchers at Center for World-Class Universities (CWCU) of Shanghai Jiao Tong University developed the first multi-indicator global university ranking – Academic Ranking of World Universities (ARWU). Since 2009, the ARWU has been published and copyrighted by ShanghaiRanking Consultancy, which is a fully independent organization dedicating to higher education data and research on higher education intelligence. Ever since the first publication, ARWU has attracted a great deal of attention from universities, governments and public media all over the world. One of the factors for the significant influence of ARWU is that it only employs data originated from third parties so that the reliability of data and result is ensured. Nevertheless, the available third-party data on world universities is rare. Only a very limited number of useful indicators can be generated, which can hardly meet the increasing needs for the comparisons of global universities from various perspectives.

The Global Research University Profiles (GRUP) project was conducted by CWCU from 2011 to 2015 and by ShanghaiRanking Consultancy since 2016. The GRUP aims to develop a database on the facts and figures of around 1,500 research universities in the world. The online survey of the GRUP had been designed to collect the basic information of these institutions such as number of academic staffs, number of students, total income, research income and so on. The survey results were combined with other performance indicators for these 1500 research universities in order to produce more comprehensive and customized comparisons of research universities at a global level.

- (1) The customized benchmarking and ranking platform — GRUP platform (<http://www.shanghairanking.com/grup/index.html>) allows you to view and compare universities in different rank ranges and/or in different regions/countries in terms of 35 indicators about students, faculty and resources. It also allows universities to estimate their ranks in Academic Ranking of World Universities based on their actual or expected data on these indicators. By combining the survey data with those gathered from other sources, global rankings of universities by individual indicators are presented on the platform as well.
- (2) The data has been used to design the new rankings such as the [Ranking of Top Universities in Greater China](#). The GRUP survey results will be used in more future rankings when appropriate.
- (3) The GRUP Survey results are used to enrich the university profiles on ARWU Website -- [Universities](#) (<http://www.shanghairanking.com/Search.html>), which provide more information to the public.

Since 2016, ShanghaiRanking Consultancy started a separate data survey - “Data Exchange Program (DEP)” for Mainland Chinese universities. Analysis in this report is based on data collected from both GRUP and DEP.

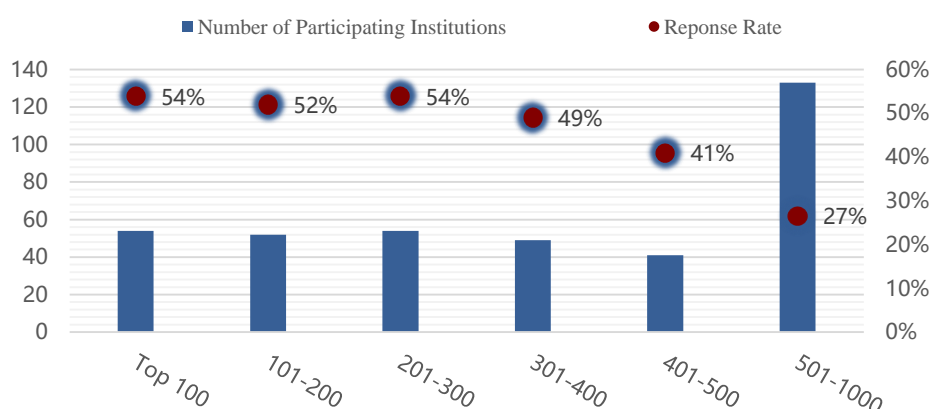
Figure 1 shows the response rates for Top 100 universities, Top 500 universities and all universities ranked in ARWU from 2011 to 2018.



**Figure 1. Percentage of Participating Universities from 2011 to 2018**

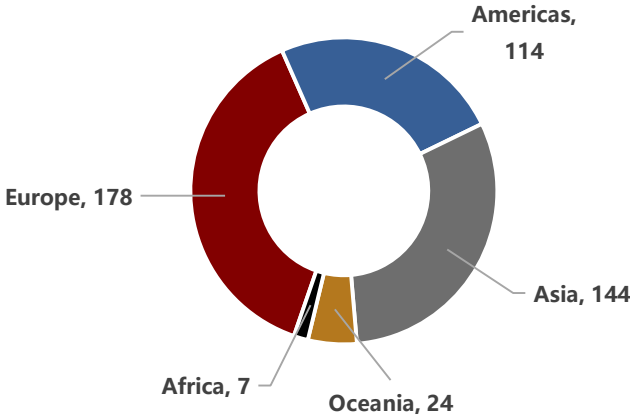
In 2018, altogether 467 institutions completed the query datasheet of GRUP or DEP. They formed a representative sample set to describe and reflect the characteristics of world leading research universities.

Figure 2 displays the number and distribution of participating institutions in 2018 Survey by their ranking range in ARWU 2018. It can be observed that the response rates for Top 300 institutions is over 50%. Universities in Top 100 have the highest response rate (54%).

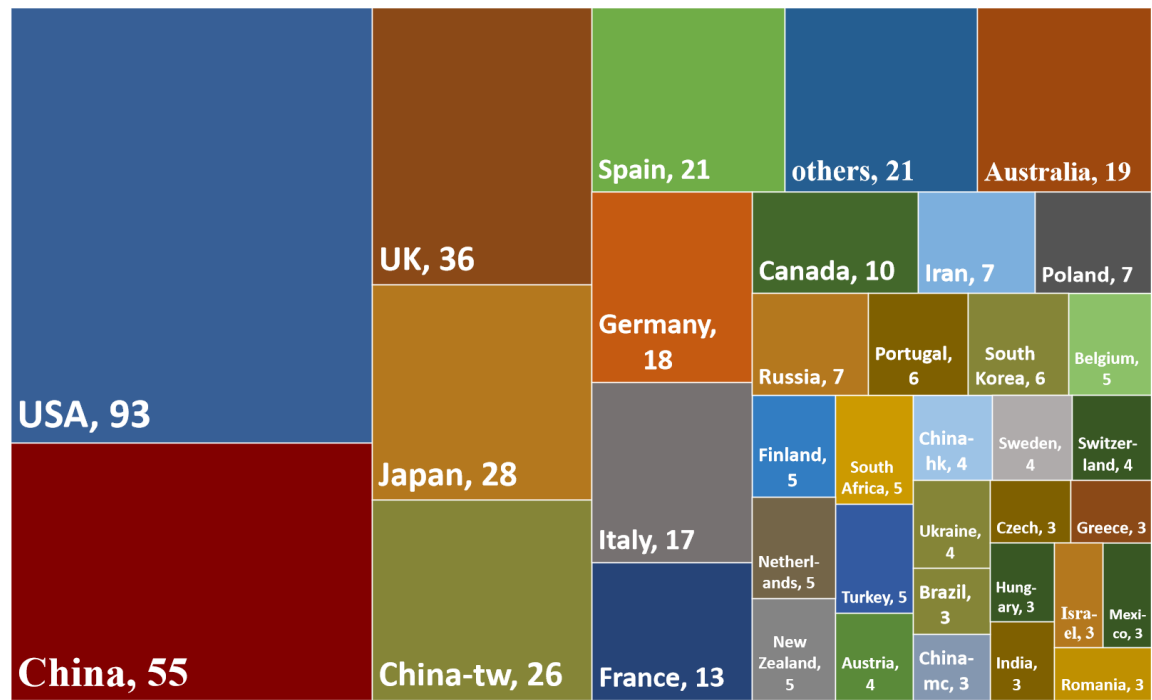


**Figure 2. Response Rate of Participating Universities in GRUP 2018**

Figure 3 and Figure 4 demonstrate the distribution of participating institutions by region and country. There are 178 institutions in Europe participating in GRUP Survey 2018, accounting for 38.1% of all participants. As shown in Figure 4, USA still has the largest number of participating universities. A list of all participating institutions is given in Appendix 4.



**Figure 3. Distribution of Participating Institutions by Region 2018**



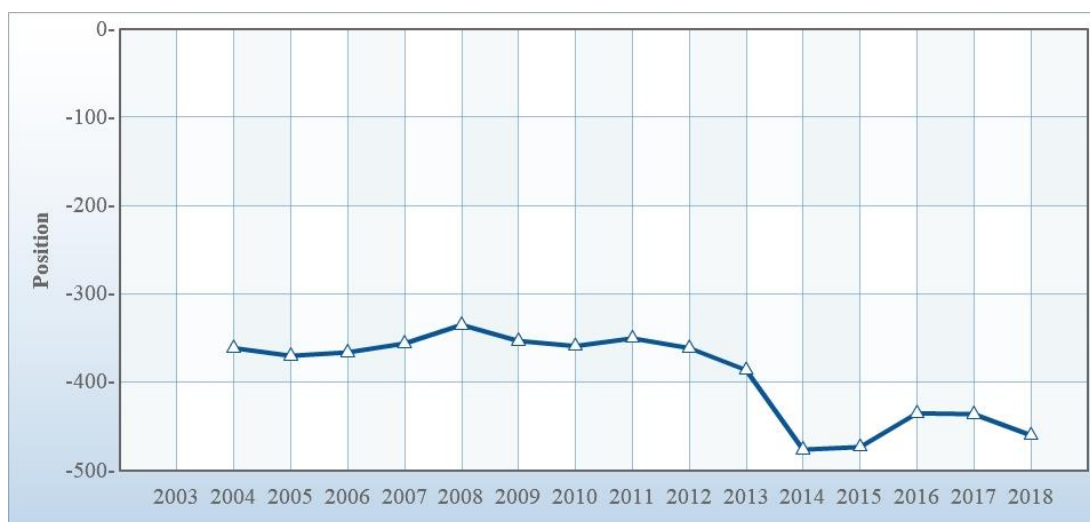
**Figure 4. Distribution of Participating Institutions by Country 2018**

## 2 Performance in ARWU 2018

Figure 5 demonstrates the performance of Aristotle University of Thessaloniki in Academic Ranking of World Universities (ARWU) from 2003 to 2018.

**Institutional Name: Aristotle University of Thessaloniki**

**Performance in Academic Ranking of World Universities (ARWU):**



**Figure 5. Performance in ARWU from 2003 to 2018**



# 3 Benchmarking Analysis Based on GRUP

## Survey 2018

GRUP serves as a comprehensive benchmarking tool and allows users to view and compare statistics of 40 indicators (13 indicators about Students, 9 indicators about Faculty, 13 indicators about Resource and 5 ARWU indicators) for institutions in different rank ranges and/or in different regions/countries. It not only provides comprehensive and quantitative descriptions of world leading research universities, but also assists universities to identify their advantages and disadvantages as compared to those of their concern.

At the moment, the GRUP platform provides two functions: Benchmarking and Estimation. The benchmarking analysis based on indicators and universities groups is available for all participants with your access to the platform. Both the GRUP Indicators and groups of institution for Benchmarking are given in Appendix 1 and Appendix 3. In terms of the Estimation function, universities can input data for different indicators on the platform to arrive at an estimated ARWU rank.

### 3.1 Descriptive Statistics

Table 1 displays the example of benchmarking results for selected 15 indicators about faculty, students and resources about your institution. Of which:

4 indicators are about faculty:

- Number of Academic Staff (Teaching Related)
- Percentage of Academic Staff (Teaching Related) with Doctoral Level Degree
- Percentage of International Academic Staff (Teaching Related)
- Number of Academic Staff (Research Only)

5 indicators are about students:

- Number of Students (Degree-seeking)
- Percentage of Graduate Students
- Percentage of International Students
- Number of Doctoral Degree Awarded
- Ratio of Academic Staff (Teaching Related) to Students

6 indicators are about resources:

- Institutional Income (Millions of USD)
- Institutional Income per Student (Thousands of USD)
- Percentage of Income from Public Sectors
- Research Income (Millions of USD)
- Research Income per Academic Staff (Thousands of USD)
- Percentage of Research Income from Public Sector

For more individualized benchmarking, please access your account at the GRUP Platform  
<http://www.shanghairanking.com/grup/index.html>.



**Table 1. Comparison of Aristotle University of Thessaloniki and ARWU Top401-500  
Institutions with Selected 15 Indicators**

Indicator Group	Indicators	N	Max	Median	Min	Mean	Aristotle University of Thessaloniki
<b>Faculty</b>	Number of Academic Staff (Teaching Related)	39	9271	997	212	1528	1771
	Percentage of Academic Staff (Teaching Related) with Doctoral Level Degree	36	1.00	0.79	0.57	0.78	1.00
	Percentage of International Academic Staff (Teaching Related)	39	0.47	0.06	0.01	0.13	0.01
	Number of Academic Staff (Research Only)	36	2789	276	46	446	--
<b>Students</b>	Number of Students (Degree-seeking)	42	229424	18479	2908	27992	46597
	Percentage of Graduate Students	42	0.79	0.28	0.06	0.32	0.19
	Percentage of International Students	41	0.37	0.07	0.01	0.11	--
	Number of Doctoral Degree Awarded	38	1123	224	50	308	280
	Ratio of Academic Staff (Teaching Related) to Students	39	0.23	0.06	0.02	0.07	0.04
<b>Resources</b>	Institutional Income (Millions of USD)	38	1185.45	306.77	17.95	362.06	17.95
	Institutional Income per Student (Thousands of USD)	38	98.70	16.46	0.39	21.02	0.39
	Percentage of Income from Public Sectors	36	0.93	0.64	0.10	0.54	0.75
	Research Income (Millions of USD)	36	174.17	48.34	7.59	62.22	35.38
	Research Income per Academic Staff (Thousands of USD)	34	322.56	33.99	1.35	48.73	--
	Percentage of Research Income From Public Sector	36	0.96	0.70	0.16	0.67	0.62

*Note:*

1. "--" represents the data is unavailable.

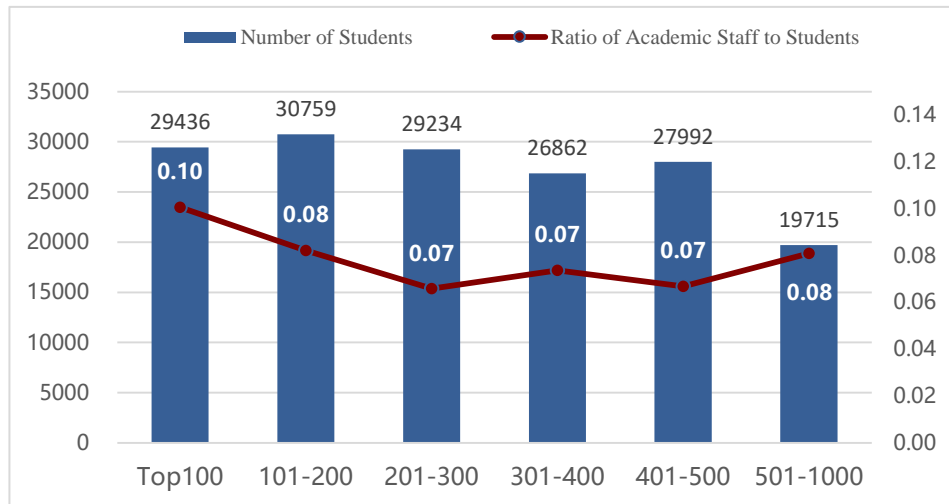
2. *N: Number of Institutions with Valid Data.*

### 3.2 Data Analysis

In the data analysis section, universities published in ARWU 2018 are divided into 6 groups, as can be seen from Figure 6 below, and indicator performance of these groups is presented.

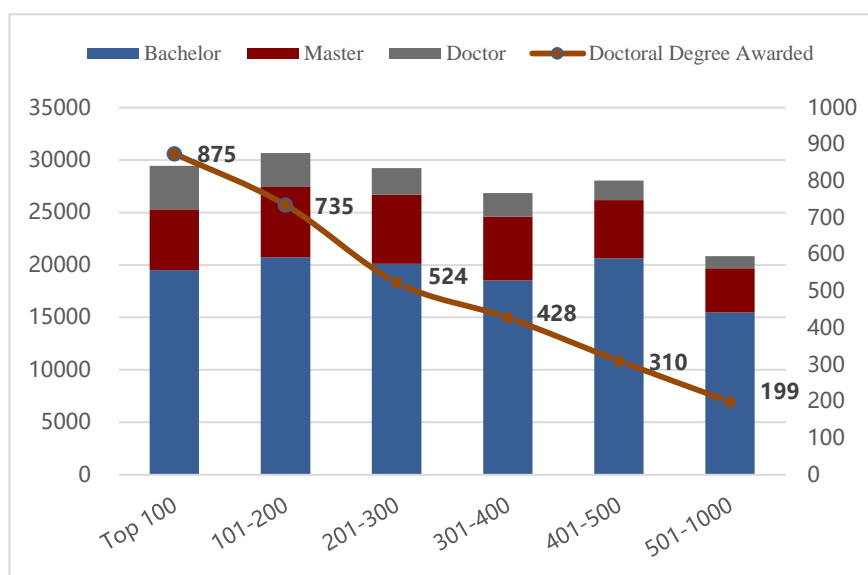
#### 1. Students

The average number of students and ratio of academic staff (Teaching Related) to students for each group of universities ranked in ARWU 2018 are shown in Figure 6. Universities ranked in group 101-200 has the highest average number of students. Average number of students in all groups within Top 500 exceeds 26,000. The ratio of academic staff (Teaching Related) to student can reflect the university's investment in teaching. Universities ranked in Top401-500 are far superior to that of other ranking group among Top401-5000 in ratio of academic staff to students.



**Figure 6. The Number of Students and Ratio of Academic Staff to Students**

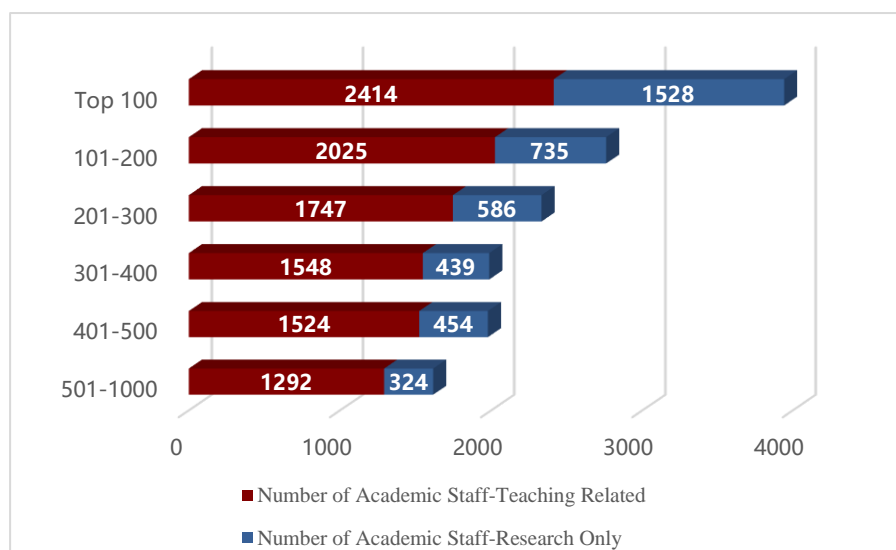
Figure 7 presents the average number of total bachelor students, master students and doctoral students of participating institutions. It also shows the average number of doctoral degree awarded in each ranking block. Doctoral students act as an important contributor to the research production for a university. Universities with better ranking performance had more doctoral students and awarded more doctoral degrees. The average number of doctoral degree awarded of Top 100 universities is more than four times that of Top 500-1000 universities.



**Figure 7. The Number of Students and Doctoral Degree Awarded**

## 2. Faculty

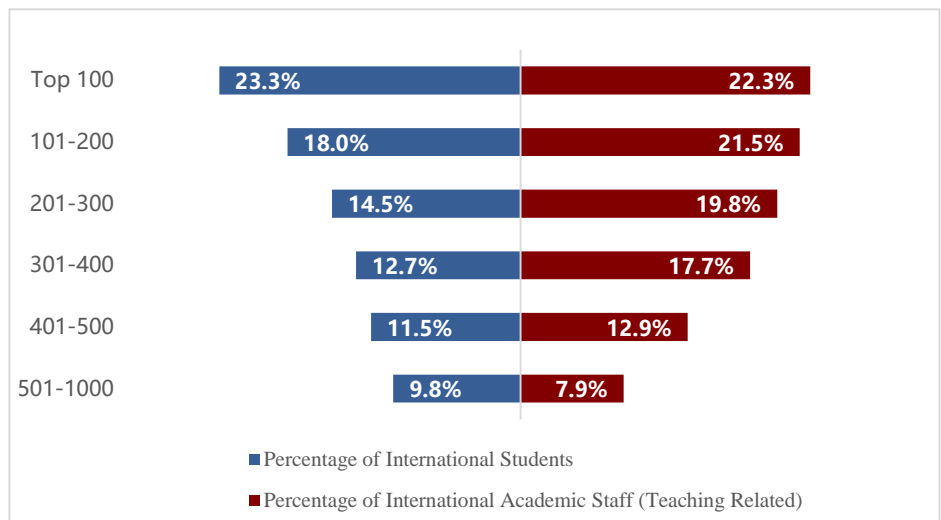
Figure 8 shows the average number of teaching related staff and research only staff of participating institutions based on their ranking performances in ARWU 2018. Top 100 has the highest number both in teaching related staff and research only staff.



**Figure 8. The Number of Teaching Related and Research Only Academic Staff**

The average percentage of international students and the average percentage of international academic staff teaching related contribute to our understanding of the degree of internationalization of universities. These two indicators are shown in Figure 9 below. The average percentage of international students drops with ARWU 2018 ranking group. Figure 9 also indicates the average percentage of international academic staff for Top 200 universities all

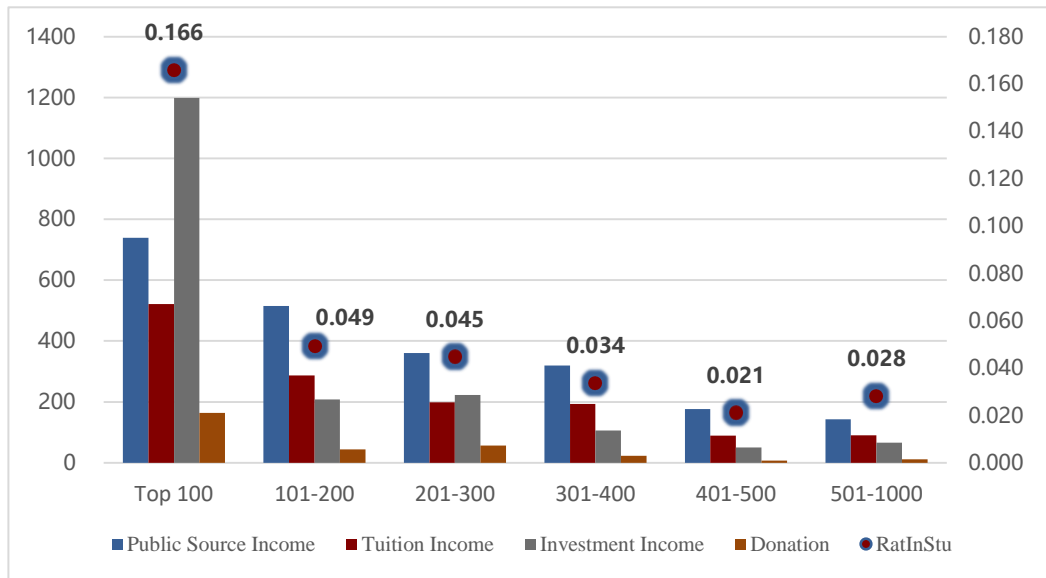
exceeds 20%.



**Figure 9. The Percentage of International Students and International Academic Staff**

### 3. Resource

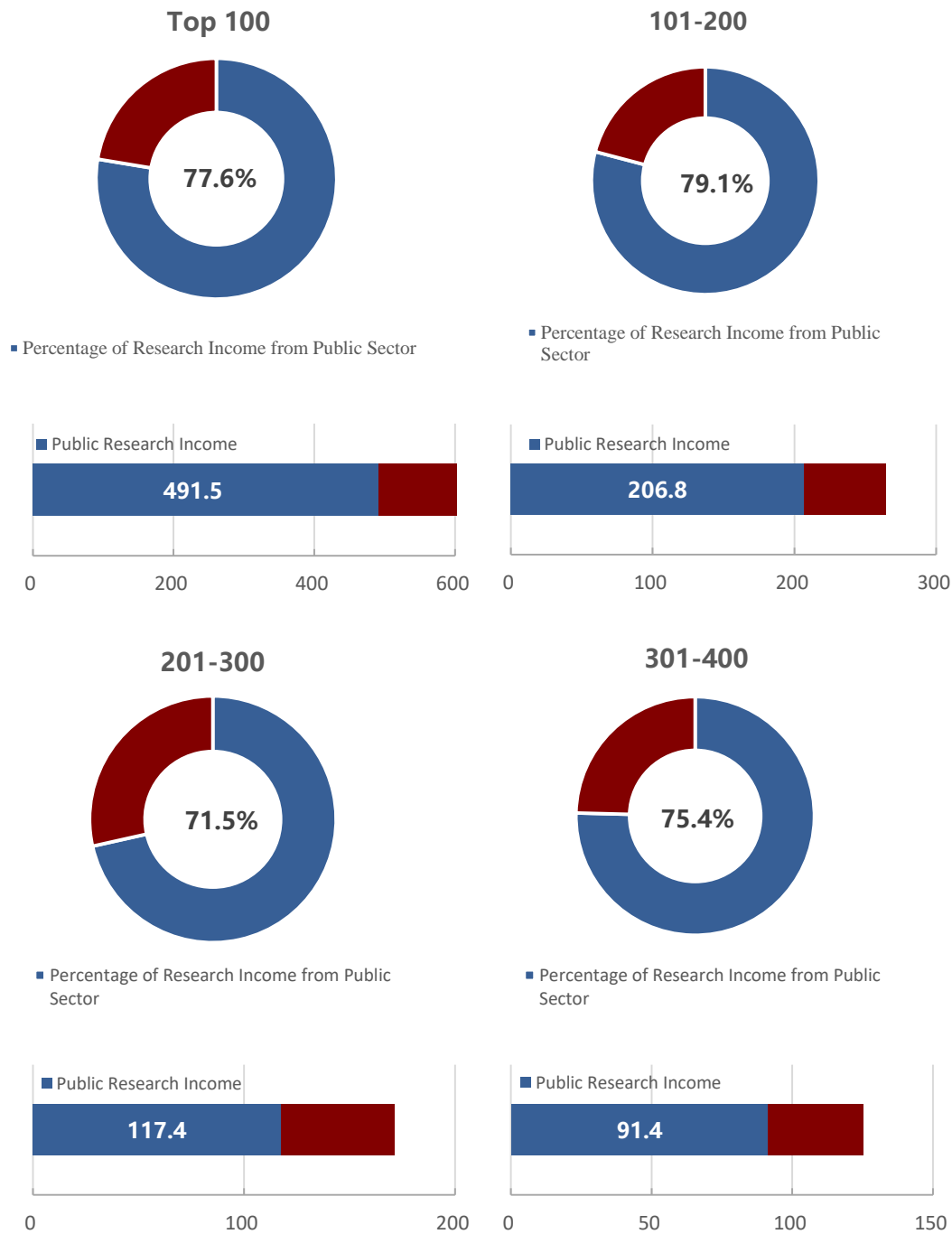
Figure 10 demonstrates the average institutional income from four main sources in different ranking ranges (Millions of USD), including institutional income from governmental (public) sectors, income from student tuition and fees, income from institutional investments as well as donation/gifts income. The overall trend of the four indicators is consistent. Universities in Top401-500 has significantly higher investment income and ratio of total income to student than that in other ranking groups.

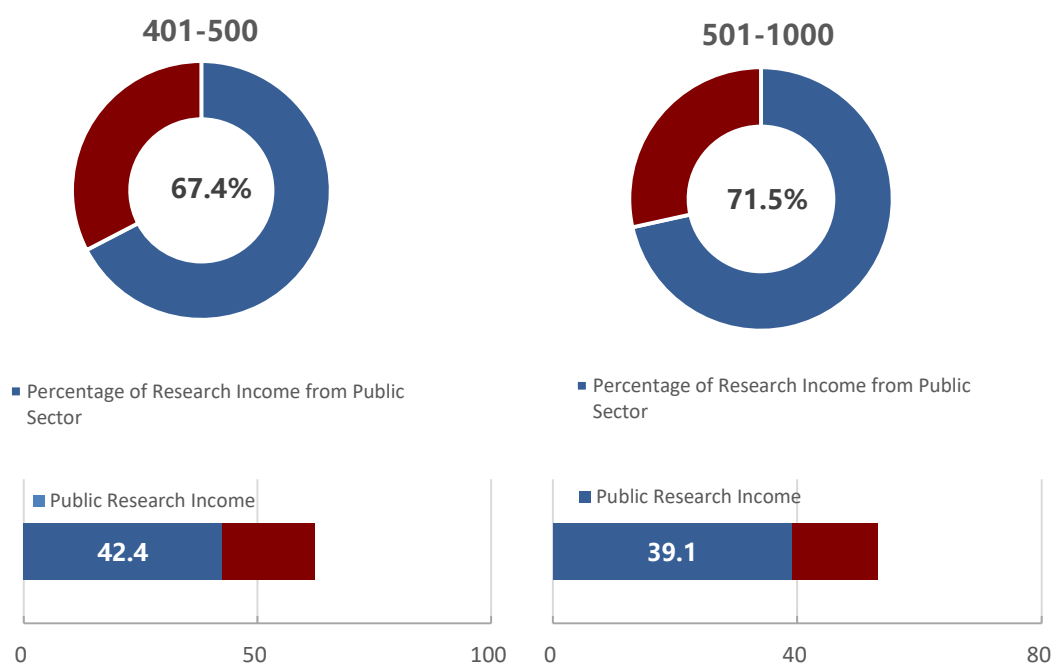


**Figure 10. Institutional Income from 4 Main Sources and RatInStu**

Research Income refers to the overall income derived from externally sponsored research carried

out by institution, the research income from governmental (public) sectors often occupies most of the total research income, the GRUP data result of participating institutions of ARWU Top401-5000 (Figure 11) shows that the average percentage of research income from public sector mostly exceeds 70%.





**Figure 11. Percentage and Amount of Research Income from Public Sector**

## Appendix 1 GRUP Indicators for Benchmarking

	Indicators
<b>Students Indicators</b>	Total Number of Students
	Number of Undergraduate Students
	Number of Master's Students
	Number of Doctoral Students
	Percentage of Graduate Students
	Percentage of International Students
	Percentage of International Undergraduate Students
	Percentage of International Master's Students
	Percentage of International Doctoral Students
	Number of Doctoral Degree Awarded
	Employment Rate of Bachelor Degree Recipients (0-3 months)
	Employment Rate of Master's Degree Recipients (0-3 months)
	Employment Rate of Doctoral Degree Recipients (0-3 months)
<b>Faculty Indicators</b>	Total Number of Academic Staff
	Number of Academic Staff (Teaching Related)
	Number of Academic Staff (Research Only)
	Percentage of Academic Staff (Teaching Related) with a Doctorate
	Percentage of Academic Staff (Research Only) with a Doctorate
	Percentage of International Academic Staff (Teaching Related)
	Percentage of International Academic Staff (Research Only)
	Ratio of Academic Staff (Teaching Related) to Students
	Ratio of Academic Staff to Students
<b>Resources Indicators</b>	Total Amount of Institutional Income
	Institutional Income per Student
	Institutional Income from Public Sectors
	Percentage of Institutional Income from Public Sectors
	Institutional Income from Student Tuition & Fees
	Institutional Income from Student Tuition and Fees per Student
	Institutional Income from Donations and Gifts
	Institutional Income from Institution's Investments
	Total Amount of Research Income
	Research Income per Academic Staff



	Indicators
<b>Resources Indicators</b>	Research Income from Public Sectors
	Percentage of Research Income from Public Sectors
	Research Income from Industry
<b>ARWU Indicators</b>	Number of Alumni of Nobel Laureates and Fields Medalists
	Number of Staff of Nobel Laureates and Fields Medalists
	Number of Highly Cited Researchers
	Number of Nature and Science Papers
	Number of SCIE and SSCI Papers

## Appendix 2 Indicators Definition of GRUP Survey 2018

### Notes:

**Year of Data:** The GRUP Survey 2018 collects the information of participating institutions in the 2016 calendar year or the 2016-2017 academic/fiscal year whichever appropriate.

**FTE Number:** Numbers of staff or students should be provided in Full Time Equivalents (FTE), unless otherwise noted. The formulas of calculating FTE are:

FTE number of academic staff:  $[FTE = \text{the number of full-time academic staff} + (\text{the number of part-time academic staff}) * (\text{the FTE conversion factor})]$ . The FTE conversion factor is calculated as the total hours worked of part-time staff divided by the number of hours in a full-time schedule. For example, if part-time staff work on average for one-third of the statutory hours of full-time staff, then the FTE conversion factor is 1/3.

FTE number of students:  $[FTE = \text{the number of full-time students} + (\text{the number of part-time students}) * (\text{the FTE conversion factor})]$ . The FTE conversion factor is calculated as the course load generated by part-time students during reference period divided by the normal course load during reference period.

### B1. Number (FTE) of Academic Staff (Teaching Related)

#### -B1.1 Total

##### -B1.1.1 Of which hold doctoral-level degrees

##### -B1.1.2 Of which are overseas/international staff

##### -B1.1.3 Of which are qualified to supervise postgraduate students

**Academic Staff (Teaching Related) - Total:** refers to the FTE number of personnel who carry teaching/instruction duties, including those with released time for research, administration or service. This may include the staff holding an academic rank with titles such as professor, associate professor, assistant professor, clinical professor, instructor, lecturer, adjunct professor, adjunct associate professor, adjunct lecturer, or the equivalent of any of these academic ranks. This may also include chancellors, presidents, deans, medical practitioners, dentists, veterinarians and other health care professionals if they also undertake teaching duties. This excludes student teachers or teacher aides, research-only staff, post-doctoral fellows, administrative officers (e.g. dean of students, registrar), support personnel (e.g. clerical staff,

building operations or maintenance staff, librarian, security personnel, drivers, catering staff) and doctoral student.

**Holding Doctoral-Level Degrees:** refers to the number of Academic Staff (Teaching Related) who hold Doctor of Philosophy (Ph.D. or sometimes D.Phil) or its equivalent (e.g. Ed.D.), or other terminal degree appropriate to their academic field or discipline.

**Overseas/International Staff:** refers to the FTE number of Academic Staff (Teaching Related) who do not have the nationality of the country where your institution is located.

**Qualified to Supervise Postgraduate Students:** refers to the number of Academic Staff (Teaching Related) who are recognized to have the right to supervise students at master's, doctoral or its equivalent levels.

## **B2. Number (FTE) of Academic Staff (Research Only)**

### **-B2.1 Total**

#### **-B2.1.1 Of which hold doctoral-level degrees**

#### **-B2.1.2 Of which are overseas/international staff**

#### **-B2.1.3 Of which hold the academic rank “post-doctoral fellow”**

**Academic Staff (Research Only) - Total:** refers to the FTE number of personnel who only carry research duties with no obligation for teaching. This may include the staff holding an academic rank with titles such as research professor, research assistant professor, research associate professor, research assistants, or post-doctoral fellows. This excludes doctoral students.

**Holding Doctoral-Level Degrees:** refers to the number of academic staff (research only) who hold Doctor of Philosophy (Ph.D. or sometimes D.Phil) or its equivalent (e.g. Ed.D.), or other terminal degrees.

**Overseas/International Staff:** refers to the FTE number of academic staff (research only) who do not have the nationality of the country where your institution is located.

**Post-doctoral Fellow:** refers to the FTE number of academic staff who hold the post-doctoral position/title and conduct research only.

## **B3. Number (FTE) of Students Enrolled at Bachelor's Level**

### **-B3.1 Total**

#### **-B3.1.1 Of which are overseas/international students**

**Students Enrolled at Bachelor's Level - Total:** refers to the FTE number of students who are undertaking courses at bachelor's or its equivalent level, usually requiring 3 or 4 years (or the equivalent) of full-time study.

**Overseas/International Students:** refer to the FTE number of students enrolled at bachelor's level who do not have the nationality of the country where your institution is located.

#### **B4. Number (FTE) of Students Enrolled at Master's Level**

##### **-B4.1 Total**

-B4.1.1 Of which study for academic/research master's degrees

-B4.1.2 Of which study for professional master's degrees

-B4.2 Of which are overseas/international students

**Students Enrolled at Master's Level - Total:** refers to the FTE number of students who are undertaking courses at master's or its equivalent level. Those students may be course-based, research-based, or a mixture of the two. Normally, those students may have earned a bachelor's or its equivalent degrees.

**Students Studying for Academic/Research Master's Degrees:** refers to the FTE number of students who are undertaking courses for Master of Arts (M.A.), Master of Science (M.S. or M.Sc.) or its equivalent degrees awarded in the liberal arts and sciences for advanced scholarship in a subject field or discipline and for demonstrated ability to perform scholarly research. This excludes students enrolled at master's or its equivalent level for professional degrees, for example Master of Business Administration (M.B.A.), Master of Education (M.Ed.), Master of Fine Arts (M.F.A.) and Master of Public Administration (M.P.A.).

**Students Studying for Professional Master's Degrees:** refers to the FTE number of students who are undertaking courses for a professional master's degree such as Master of Business Administration (M.B.A.), Master of Education (M.Ed.), Master of Fine Arts (M.F.A.), Master of Public Administration (M.P.A.), Masters of Laws (LL.M.) and Masters of Science in various medical specializations (M.S.).

**Overseas/International Students:** refer to the FTE number of students enrolled at master's level who do not have the nationality of the country where your institution is located.

#### **B5. Number (FTE) of Students Enrolled at Doctoral Level**

##### **-B5.1 Total**

-B5.1.1 Of which study for academic/research doctoral degrees

-B5.1.2 Of which study for professional doctoral degrees

-B5.2 Of which are overseas/international students

**Students Enrolled at Doctoral Level - Total:** refers to the FTE number of students who are undertaking courses at doctoral or its equivalent level. Normally, those students may have earned a bachelor's, master's or its equivalent degrees.

**Students Studying for Academic/Research Doctoral Degrees:** refers to the FTE number of students who are undertaking courses for academic/research doctoral degrees such as Doctor of Philosophy (Ph.D.), Doctor of Science (D.Sc./Sc.D.), or its equivalent degrees, which requires the preparation and defense of a dissertation based on original research to demonstrate ability to perform scholarly research.

**Students Studying for Professional Doctoral Degrees:** refers to the FTE number of students who are undertaking courses for professional doctorate degrees such as Doctor of Arts (D.A./D. Arts), Doctor of Business Administration (D.B.A.), Doctor of Education (Ed.D.), Doctor of Engineering (D.Eng./D.E.Sc./D.E.S.), Doctor of Health Science (D.H.Sc.), Doctor of Juridical Science (J.S.D./S.J.D.), Doctor of Music (D.M.), Doctor of Nursing Science (D.N.Sc.), Doctor of Public Administration (D.P.A.), Doctor of Public Health (Dr.P.H.), Doctor of Sacred Theology (S.T.D.), which may have a substantial taught element and aim to develop an individual's professional practice and to support them in providing a contribution to (professional) knowledge. This also includes study for the professional degrees in fields such as Chiropractic (D.C. or D.C.M.), Dentist (D.M.D.), Law (L.L.B., J.D.), Medicine (M.D.), Optometry (O.D.), Osteopathic Medicine (D.O.), Pharmacy (Pharm.D.), Podiatry (D.P.M., D.P., or Pod.D.), Theology (M.Div., M.H.L., B.D., or Ordination), Veterinary Medicine (D.V.M.).

**Overseas/International Students:** refers to the FTE number of students enrolled at doctoral level who do not have the nationality of the country where your institution is located.

## **B6. Number of Doctoral Degrees Awarded**

-B6.1 Total

-B6.1.1 Of which are academic/research doctoral degrees

**Doctoral Degrees Awarded - Total:** refers to the overall number of doctoral or its equivalent degrees awarded in reference year, which includes academic/research and professional doctoral degrees.

**Academic/Research Doctoral Degrees Awarded:** refers to the number of doctoral degrees

awarded that are academic/research doctoral degrees.

## **B7. Unemployment Rate of Graduates**

-B7.1 -month/XXX-month unemployment rate of bachelor's degree recipients

-B7.2 -month/XXX-month unemployment rate of master's degree recipients

-B7.3 -month/XXX-month unemployment rate of doctoral degree recipients

**Unemployment Rate of Bachelor's Degree Recipients:** refers to the percentage of the total bachelor's degree recipients that is jobless, looking for a job, and available for work within 3 months after graduation. Those who have no job and are not looking for one, such as those who are continuing their studies, or who have a physical or mental disability that prevents them from participating in the labor force are not included in the labor force and are not considered unemployed. If the 3-month unemployment rate is not available, please choose the date you do employment survey and enter the figures.

**Unemployment Rate of Master's Degree Recipients:** refers to the percentage of the total master's degree recipients that is jobless, looking for a job, and available for work within 3 months after graduation. Those who have no job and are not looking for one, such as those who are continuing their studies, or who have a physical or mental disability that prevents them from participating in the labor force are not included in the labor force and are not considered unemployed. If the 3-month unemployment rate is not available, please choose the date you do employment survey and enter the figures.

**Unemployment Rate of Doctoral Degree Recipients:** refers to the percentage of the total doctoral degree recipients that is jobless, looking for a job, and available for work within 3 months after graduation. Those who have no job and are not looking for one, such as those who are continuing their studies, or who have a physical or mental disability that prevents them from participating in the labor force are not included in the labor force and are not considered unemployed. If the 3-month unemployment rate is not available, please choose the date you do employment survey and enter the figures.

## **B8. Institutional Income**

-B8.1 Total

-B8.1.1 Of which was derived directly from governmental/public sectors

-B8.1.2 Of which was derived from student tuition and fees

-B8.1.3 Of which was derived from donations/gifts

-B8.1.4 Of which was derived from institution's investments and own business

**Institutional Income - Total:** refers to the overall income from funding sources such as government legislative appropriations/block funding, student tuition and fees, research grants and contracts, donations/gifts and endowment income, international agencies and other foreign sources, institution's trading activities, institution's investments, auxiliary enterprises sales and services.

**From Governmental/Public Sectors:** refers to the overall income directly from state/federal/regional/local governmental agencies or through an intermediate agency that are used for general institutional operations and research, which includes government legislative appropriations/block funding, research grants and contracts, student financial aids (e.g. scholarships, grants, loans and tax deductions), and charities (e.g. charitable foundations, charitable trusts).

**From Student Tuition and Fees:** refers to the overall income derived from all kinds of teaching courses and degree programs for which fees are charged. This may include tuition and fees from continuing professional development.

**From Donations/Gifts:** refers to the overall income from general and specific donations/gifts, including the income earned from the capital of the donations/gifts whether arising from the interest or dividends on investments, bank interest or rents from real property.

**From Institution's Investments and Own Business:** refers to the overall income from institution's investments and own business, including investments of endowment funds, income from institution's trading activities, and income from institution's auxiliary enterprise sales and services, etc.

**Note:**

B8.1 Total Institutional Income includes all the income stated in B9.1 Total Research Income.

B8.1.1 Institutional Income which was derived directly from governmental/public sectors includes B9.1.1 Research Income which was derived from governmental/public sectors.

## **B9. Research Income**

-B9.1 Total

-B9.1.1 Of which was derived from governmental/public sectors



-B9.1.2 Of which was derived from industry

**Research Income - Total:** refers to the overall income derived from externally sponsored research carried out by your institution, including all research grants and contracts income from governmental (public) sectors, industrial/commercial companies, public corporations, foundations, charities, international organizations and so on.

**From Governmental/Public Sectors:** refers to the research grants and contracts income from governmental (public) sectors (state/federal/regional/local governmental agencies or intermediate agencies) and charities (e.g. charitable foundations, charitable trusts). This excludes all research grants and contracts income from public corporations.

**From Industry:** refers to the research grants and contracts income from industrial/commercial companies and public corporations.

**Note:**

B9.1 Total Research Income should be included in B8.1 Total Institutional Income.

B9.1.1 Research Income which was derived directly from governmental/public sectors should be included in B8.1.1 Institutional Income which was derived from governmental/public sectors.

B9.1.2 Research Income which was derived directly from industry may not be included in any 4 of sub-sectors in B8 Institutional Income.

### Appendix 3 Groups of Institutions for Benchmarking

	Name of Groups	Institutions Included
<b>Groups by ARWU</b>	ARWU universities by ranking groups	Universities in ARWU Top 100, 101-200, 201-300, 301-400, 401-500, 500+
	ARWU Top 500 universities by continent	ARWU Top 500 universities in Americas, Asia, Europe, Oceania
	ARWU Top 500 universities by sub-region	ARWU Top 500 universities in Eastern Asia, Eastern Europe, Latin America, Northern America, Northern Europe, Southern Europe, Western Europe
	ARWU Top 500 universities by country/area	ARWU Top 500 universities in Australia, Canada, China, Germany, France, US, UK, etc.
	Best 20 universities by sub-region	Best 20 universities in Eastern Asia, Eastern Europe, Latin America, Northern-America, Northern Europe, Southern Europe, Western Europe
	Best 10 universities by country/area	Best 10 universities in Australia, Canada, China, Germany, France, US, UK, etc.
<b>National Groups</b>	Australia: Go8 universities	Group of Eight member universities in Australia
	Canada: G10 universities	G10 Group of Canadian Research Universities
	Germany: EliteU universities	"Excellence Initiative" program universities in Germany
	Japan: N7 universities	National Seven Universities in Japan
	UK: Russell universities	Russell Group member universities in UK
	US: AAU universities	Association of American Universities member universities in US

## Appendix 4 List of Participating Institutions of GRUP Survey 2018

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
Stanford University	USA	2
Massachusetts Institute of Technology (MIT)	USA	4
University of California, Berkeley	USA	5
Princeton University	USA	6
California Institute of Technology	USA	9
University of Chicago	USA	10
University of California, Los Angeles	USA	11
Cornell University	USA	12
University of Washington	USA	14
University of California, San Diego	USA	15
University of Pennsylvania	USA	16
University College London	UK	17
Swiss Federal Institute of Technology Zurich	Switzerland	19
Washington University in St. Louis	USA	20
Imperial College London	UK	24
Northwestern University	USA	25
University of Michigan-Ann Arbor	USA	27
University of Wisconsin - Madison	USA	28
Rockefeller University	USA	30
University of North Carolina at Chapel Hill	USA	30
The University of Manchester	UK	34
Sorbonne University	France	36
University of Minnesota, Twin Cities	USA	37
University of Colorado at Boulder	USA	38
University of Paris-Sud (Paris 11)	France	42
University of British Columbia	Canada	43
Karolinska Institute	Sweden	44
Heidelberg University	Germany	47
Vanderbilt University	USA	50
University of Maryland, College Park	USA	51
Utrecht University	Netherlands	51
University of Munich	Germany	53
University of Zurich	Switzerland	54
The University of Queensland	Australia	55
University of Southern California	USA	60
Ghent University	Belgium	61
University of Groningen	Netherlands	66
University of Sydney	Australia	68

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
The Australian National University	Australia	69
Boston University	USA	70
Purdue University - West Lafayette	USA	70
Leiden University	Netherlands	74
Pennsylvania State University - University Park	USA	74
Georgia Institute of Technology	USA	79
Nagoya University	Japan	83
University of California, Irvine	USA	83
National University of Singapore	Singapore	85
KU Leuven	Belgium	86
University of Florida	USA	86
Carnegie Mellon University	USA	91
Monash University	Australia	91
The University of Western Australia	Australia	93
The Ohio State University - Columbus	USA	94
University of California, Davis	USA	96
Aix Marseille University	France	101-150
Arizona State University	USA	101-150
Case Western Reserve University	USA	101-150
Emory University	USA	101-150
Fudan University	China	101-150
Indiana University Bloomington	USA	101-150
King Saud University	Saudi Arabia	101-150
Lund University	Sweden	101-150
Michigan State University	USA	101-150
Osaka University	Japan	101-150
Rutgers, The State University of New Jersey - New Brunswick	USA	101-150
Shanghai Jiao Tong University	China	101-150
Sun Yat-Sen University	China	101-150
The University of Adelaide	Australia	101-150
The University of New South Wales	Australia	101-150
The University of Sheffield	UK	101-150
Tohoku University	Japan	101-150
University of Amsterdam	Netherlands	101-150
University of Birmingham	UK	101-150
University of California, Santa Cruz	USA	101-150
University of Lausanne	Switzerland	101-150
University of Leeds	UK	101-150

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
University of Liverpool	UK	101-150
University of Utah	USA	101-150
University of Warwick	UK	101-150
University Paris Diderot - Paris 7	France	101-150
VU University Amsterdam	Netherlands	101-150
Curtin University	Australia	151-200
Hokkaido University	Japan	151-200
Huazhong University of Science and Technology	China	151-200
London School of Economics and Political Science	UK	151-200
North Carolina State University - Raleigh	USA	151-200
Queen Mary University of London	UK	151-200
Sichuan University	China	151-200
Sungkyunkwan University	South Korea	151-200
Tel Aviv University	Israel	151-200
Texas A&M University	USA	151-200
The Chinese University of Hong Kong	China-hk	151-200
The University of Glasgow	UK	151-200
Trinity College Dublin	Ireland	151-200
TU Dresden	Germany	151-200
Tufts University	USA	151-200
Université Grenoble Alpes	France	151-200
Université libre de Bruxelles (ULB)	Belgium	151-200
University of Exeter	UK	151-200
University of Hamburg	Germany	151-200
University of Lisbon	Portugal	151-200
University of Massachusetts Amherst	USA	151-200
University of Muenster	Germany	151-200
University of Ottawa	Canada	151-200
University of Waterloo	Canada	151-200
University of Wuerzburg	Germany	151-200
Beihang University	China	201-300
Brandeis University	USA	201-300
Chalmers University of Technology	Sweden	201-300
Charles University in Prague	Czech	201-300
China Medical University (Taichung)	China-tw	201-300
City University of Hong Kong	China-hk	201-300
Claude Bernard University Lyon 1	France	201-300
Dalian University of Technology	China	201-300

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
Dartmouth College	USA	201-300
Deakin University	Australia	201-300
Durham University	UK	201-300
George Mason University	USA	201-300
Karlsruhe Institute of Technology (KIT)	Germany	201-300
KTH Royal Institute of Technology	Sweden	201-300
National Autonomous University of Mexico	Mexico	201-300
Newcastle University	UK	201-300
Polytechnic Institute of Milan	Italy	201-300
Queen's University	Canada	201-300
Queensland University of Technology	Australia	201-300
RWTH Aachen University	Germany	201-300
Sapienza University of Rome	Italy	201-300
Soochow University	China	201-300
South China University of Technology	China	201-300
Southeast University	China	201-300
The George Washington University	USA	201-300
The Hong Kong University of Science and Technology	China-hk	201-300
The University of Auckland	New Zealand	201-300
The University of Georgia	USA	201-300
University of Aberdeen	UK	201-300
University of Antwerp	Belgium	201-300
University of Bergen	Norway	201-300
University of Delaware	USA	201-300
University of East Anglia	UK	201-300
University of Hawaii at Manoa	USA	201-300
University of Houston	USA	201-300
University of Illinois at Chicago	USA	201-300
University of Innsbruck	Austria	201-300
University of Kansas	USA	201-300
University of Leicester	UK	201-300
University of Miami	USA	201-300
University of Missouri - Columbia	USA	201-300
University of Montpellier	France	201-300
University of Notre Dame	USA	201-300
University of Padua	Italy	201-300
University of South Florida	USA	201-300
University of Tasmania	Australia	201-300

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
University of the Witwatersrand	South Africa	201-300
University of Tsukuba	Japan	201-300
University of Ulm	Germany	201-300
University of Wollongong	Australia	201-300
Virginia Polytechnic Institute and State University	USA	201-300
Vrije Universiteit Brussel (VUB)	Belgium	201-300
Western University	Canada	201-300
Wuhan University	China	201-300
Aalto University	Finland	301-400
Autonomous University of Barcelona	Spain	301-400
China Agricultural University	China	301-400
Dalhousie University	Canada	301-400
Drexel University	USA	301-400
Ecole Normale Supérieure - Lyon	France	301-400
Griffith University	Australia	301-400
HuNan University	China	301-400
Indiana University-Purdue University at Indianapolis	USA	301-400
Keio University	Japan	301-400
Kyung Hee University	South Korea	301-400
La Trobe University	Australia	301-400
Lancaster University	UK	301-400
Nanjing Agricultural University	China	301-400
Nanjing University of Science and Technology	China	301-400
National Cheng Kung University	China-tw	301-400
Northwestern Polytechnical University	China	301-400
Okayama University	Japan	301-400
Queen's University Belfast	UK	301-400
RMIT University	Australia	301-400
Saint Petersburg State University	Russia	301-400
Stony Brook University	USA	301-400
Temple University	USA	301-400
The University of Dundee	UK	301-400
University at Buffalo, the State University of New York	USA	301-400
University College Dublin	Ireland	301-400
University of Campinas	Brazil	301-400
University of Central Florida	USA	301-400
University of Chile	Chile	301-400
University of Connecticut	USA	301-400



<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
University of Duisburg-Essen	Germany	301-400
University of Florence	Italy	301-400
University of Marburg	Germany	301-400
University of Otago	New Zealand	301-400
University of Pavia	Italy	301-400
University of Porto	Portugal	301-400
University of Southern Denmark	Denmark	301-400
University of St Andrews	UK	301-400
University of Surrey	UK	301-400
University of Technology Sydney	Australia	301-400
University of Tehran	Iran	301-400
University of the Basque Country	Spain	301-400
University of Turku	Finland	301-400
University of Vermont	USA	301-400
University of Victoria	Canada	301-400
University of Warsaw	Poland	301-400
Wuhan University of Technology	China	301-400
Xiamen University	China	301-400
Aristotle University of Thessaloniki	Greece	401-500
Bar-Ilan University	Israel	401-500
Beijing Institute of Technology	China	401-500
Bielefeld University	Germany	401-500
Brunel University	UK	401-500
Cairo University	Egypt	401-500
Catholic University of Chile	Chile	401-500
Chang Gung University	China-tw	401-500
China University of Geosciences (Wuhan)	China	401-500
East China Normal University	China	401-500
Ecole Polytechnique	France	401-500
Federal University of Rio Grande do Sul	Brazil	401-500
Flinders University	Australia	401-500
Florida International University	USA	401-500
Heriot-Watt University	UK	401-500
Istanbul University	Turkey	401-500
Jagiellonian University	Poland	401-500
Kaohsiung Medical University	China-tw	401-500
Kobe University	Japan	401-500
Nanjing Medical University	China	401-500

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
National Tsing Hua University	China-tw	401-500
Northeastern University (Shenyang)	China	401-500
Novosibirsk State University	Russia	401-500
Polytechnic University of Valencia	Spain	401-500
Stellenbosch University	South Africa	401-500
Technical University Darmstadt	Germany	401-500
Tokyo University of Science	Japan	401-500
University of Aveiro	Portugal	401-500
University of Bath	UK	401-500
University of Bayreuth	Germany	401-500
University of Canterbury	New Zealand	401-500
University of Eastern Finland	Finland	401-500
University of Ferrara	Italy	401-500
University of Graz	Austria	401-500
University of Kent	UK	401-500
University of Ljubljana	Slovenia	401-500
University of Minho	Portugal	401-500
University of Parma	Italy	401-500
University of Pretoria	South Africa	401-500
University of Valencia	Spain	401-500
University of Wisconsin-Milwaukee	USA	401-500
West Virginia University	USA	401-500
Auburn University	USA	501-600
Baylor University	USA	501-600
Beijing Jiaotong University	China	501-600
Catholic University of the Sacred Heart	Italy	501-600
Colorado School of Mines	USA	501-600
Ewha Womans University	South Korea	501-600
Hiroshima University	Japan	501-600
Hong Kong Baptist University	China-hk	501-600
Macau University of Science and Technology	China-mc	501-600
Masaryk University	Czech	501-600
Massey University	New Zealand	501-600
National Chiao Tung University	China-tw	501-600
National Yang Ming University	China-tw	501-600
North China Electric Power University	China	501-600
Northern Arizona University	USA	501-600
Osaka City University	Japan	501-600

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
Polytechnic University of Madrid	Spain	501-600
Rensselaer Polytechnic Institute	USA	501-600
Scuola Normale Superiore - Pisa	Italy	501-600
Sharif University of Technology	Iran	501-600
The University of Texas at San Antonio	USA	501-600
University of Arkansas at Fayetteville	USA	501-600
University of Coimbra	Portugal	501-600
University of Genoa	Italy	501-600
University of Iceland	Iceland	501-600
University of KwaZulu-Natal	South Africa	501-600
University of Macau	China-mc	501-600
University of Maribor	Slovenia	501-600
University of Oulu	Finland	501-600
University of Oviedo	Spain	501-600
University of Portsmouth	UK	501-600
University of Seville	Spain	501-600
University of Strathclyde	UK	501-600
University of Szeged	Hungary	501-600
University of the Balearic Islands	Spain	501-600
University of Trieste	Italy	501-600
University of Versailles Saint-Quentin-en-Yvelines	France	501-600
University of Vigo	Spain	501-600
University of Zagreb	Croatia	501-600
Wake Forest University	USA	501-600
York University	Canada	501-600
Zhengzhou University	China	501-600
China University of Mining and Technology - Xuzhou	China	601-700
Chonbuk National University	South Korea	601-700
Chung-Ang University	South Korea	601-700
College of William and Mary	USA	601-700
Concordia University	Canada	601-700
Donghua University	China	601-700
Indian Institute of Technology Madras	India	601-700
International School for Advanced Studies	Italy	601-700
Memorial University of Newfoundland	Canada	601-700
Miguel Hernandez University of Elche	Spain	601-700
Montana State University	USA	601-700
Murdoch University	Australia	601-700

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
National Central University	China-tw	601-700
Northeast Normal University	China	601-700
Northwest University	China	601-700
Palacký University	Czech	601-700
Polytechnic University of Catalonia	Spain	601-700
Polytechnic University of Turin	Italy	601-700
Syracuse University	USA	601-700
Taipei Medical University	China-tw	601-700
Tokyo Medical and Dental University	Japan	601-700
Tokyo Metropolitan University	Japan	601-700
Tulane University	USA	601-700
University of California-Merced	USA	601-700
University of Haifa	Israel	601-700
University of Hohenheim	Germany	601-700
University of Jyväskylä	Finland	601-700
University of La Laguna	Spain	601-700
University of Nebraska Medical Center	USA	601-700
Xidian University	China	601-700
Adam Mickiewicz University	Poland	701-800
Comenius University in Bratislava	Slovakia	701-800
Federal University of Viçosa	Brazil	701-800
Hohai University	China	701-800
Isfahan University of Technology	Iran	701-800
Istanbul Technical University	Turkey	701-800
Kanazawa University	Japan	701-800
Keele University	UK	701-800
Lehigh University	USA	701-800
Loughborough University	UK	701-800
Nagasaki University	Japan	701-800
National Chung Hsing University	China-tw	701-800
National Sun Yat-Sen University	China-tw	701-800
National University of Colombia	Colombia	701-800
Shinshu University	Japan	701-800
Southwest Jiaotong University	China	701-800
The University of Waikato	New Zealand	701-800
University of Calabria	Italy	701-800
University of Murcia	Spain	701-800
University of Salamanca	Spain	701-800

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
University of Salerno	Italy	701-800
University of South Africa	South Africa	701-800
University Rovira i Virgili	Spain	701-800
Ural Federal University	Russia	701-800
Warsaw University of Technology	Poland	701-800
Yangzhou University	China	701-800
Yokohama City University	Japan	701-800
Gazi University	Turkey	801-900
Graz University of Technology	Austria	801-900
Huaqiao University	China	801-900
Kazan (Volga region) Federal University	Russia	801-900
Kindai University	Japan	801-900
Kumamoto University	Japan	801-900
Kyushu Institute of Technology	Japan	801-900
Middle East Technical University	Turkey	801-900
National Taiwan University of Science and Technology	China-tw	801-900
Ningbo University	China	801-900
Plymouth University	UK	801-900
Portland State University	USA	801-900
Sogang University	South Korea	801-900
University of Alcalá	Spain	801-900
University of Alicante	Spain	801-900
University of Bucharest	Romania	801-900
University of Cantabria	Spain	801-900
University of Crete	Greece	801-900
University of Magdeburg	Germany	801-900
University of Tabriz	Iran	801-900
University of Valladolid	Spain	801-900
Worcester Polytechnic Institute	USA	801-900
Bogazici University	Turkey	901-1000
Carlos III University of Madrid	Spain	901-1000
Hunan Normal University	China	901-1000
Kyoto Sangyo University	Japan	901-1000
Metropolitan Autonomous University	Mexico	901-1000
National Research University Higher School of Economics	Russia	901-1000
National Taiwan Normal University	China-tw	901-1000
Osaka Prefecture University	Japan	901-1000
University of Debrecen	Hungary	901-1000

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
University of Los Andes (Colombia)	Colombia	901-1000
University of Navarra	Spain	901-1000
University of Patras	Greece	901-1000
American University	USA	1000+
Belarusian State University	Belarus	1000+
Ca' Foscari University of Venice	Italy	1000+
Catholic University of Portugal	Portugal	1000+
Central European University	Hungary	1000+
Chang'an University	China	1000+
Charles Darwin University	Australia	1000+
China Three Gorges University	China	1000+
Chung Shan Medical University	China-tw	1000+
Chung Yuan Christian University	China-tw	1000+
Chuo University	Japan	1000+
Feng Chia University	China-tw	1000+
Florida Institute of Technology	USA	1000+
Free University Berlin	Germany	1000+
Gdansk University of Technology	Poland	1000+
Gifu University	Japan	1000+
Grenoble Institute of Technology	France	1000+
Grigore T Popa University Of Medicine Pharmacy	Romania	1000+
Guangxi Medical University	China	1000+
Henan Polytechnic University	China	1000+
Hubei University of Technology	China	1000+
Jiangxi Normal University	China	1000+
Kansai Medical University	Japan	1000+
Kyoto Institute of Technology	Japan	1000+
Manchester Metropolitan University	UK	1000+
Monterrey Institute of Technology and Higher Education	Mexico	1000+
National Changhua University of Education	China-tw	1000+
National Chung Cheng University	China-tw	1000+
National Taipei University of Technology	China-tw	1000+
National Taiwan Ocean University	China-tw	1000+
National Yunlin University of Science and Technology	China-tw	1000+
Oxford Brookes University	UK	1000+
Pantheon-Sorbonne University (Paris 1)	France	1000+
Polytechnic University of Bucharest	Romania	1000+
Pontifical Catholic University of Peru	Peru	1000+

<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
Roma Tre University	Italy	1000+
Shanghai Maritime University	China	1000+
Silesian University of Technology	Poland	1000+
Tamkang University	China-tw	1000+
Taras Shevchenko National University of Kyiv	Ukraine	1000+
Texas Christian University	USA	1000+
Texas State University-San Marcos	USA	1000+
The New School	USA	1000+
Tokai University	Japan	1000+
Toyohashi University of Technology	Japan	1000+
University of Bradford	UK	1000+
University of Central Lancashire	UK	1000+
University of Dayton	USA	1000+
University of Greenwich	UK	1000+
University Of Isfahan	Iran	1000+
University of Kaiserslautern	Germany	1000+
University of Lucerne	Switzerland	1000+
University of Silesia	Poland	1000+
Vasyl Karazin Kharkiv National University	Ukraine	1000+
Voronezh State University	Russia	1000+
Al- Ahliyya Amman University	Jordan	/
Azarbaijan Shahid Madani University	Iran	/
Buein Zahra Technical University	Iran	/
Changchun Normal University	China	/
City University of Macau	China-mc	/
Cyprus University of Technology	Cyprus	/
Huzhou University	China	/
I-Shou University	China-tw	/
Ivan Franko National University of Lviv	Ukraine	/
Jamia Millia Islamia	India	/
Montan University Leoben	Austria	/
Nanjing Institute of Technology	China	/
National Dong Hwa University	China-tw	/
National Kaohsiung First University of Science and Technology	China-tw	/
National Research Nuclear University MEPhI	Russia	/
Ningxia University	China	/
Prince Sultan University	Saudi Arabia	/
Providence University	China-tw	/



<b>Institution</b>	<b>Country / Region</b>	<b>World Rank</b>
Qijing Normal University	China	/
Shandong Technology and Business University	China	/
Shanxi University of Finance and Economics	China	/
Sumy State University	Ukraine	/
Tezpur University	India	/
University of Massachusetts-Dartmouth	USA	/
University of the Côte d'Azur	France	/
Xiamen University of Technology	China	/
Xinjiang Agricultural University	China	/
Yanbian University	China	/
Zhejiang Ocean University	China	/

*\* Institutions within the same rank range are listed alphabetically.*

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