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RESEARCH ARTICLE

PRINCIPAL COMPONENT ANALYSIS AS A RANKING TOOL - A CASE OF WORLD UNIVERSITIES.

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Abstract

The purpose of this paper is to demonstrate the application of Principal Component Analysis (PCA) as a ranking tool. Given the increasing international attention on education quality, ranking of universities has become an important indicator of institutional quality. Despite the increase in ranking methodologies over the years, concern still remains over the validity and reliability of the ranking tools and methodologies. The controversy surrounding methodologies and tools remains unresolved. To conduct this demonstration, first standardized QS variables were obtained. Second, PCA analysis was applied on the variables to obtain quality levels which then informed the ranks. We compare PCA ranks against QS ranks and the results reveal that different methodologies result in different ranks. Although based on same variables, but PCA attaches weights to variables not as pre-determined but as a result. By demonstrating application of Principal Component Analysis (PCA) as a ranking tool, this paper broadens the methodological scope as academics seek consensus on the best way to define and measure university quality, which translates to university ranks.

Introduction:-

The increasing global competition makes university ranking an important subject. Consequent of the competitive environment, there has been an increasing demand for information about the quality and effectiveness of institutions of learning (Coates, 2007). Quality has become a crucial element for various stakeholders, including students as they choose institutions for their future enrollments (Altbach, 2012, Hou et al., 2012).(Berbegal-Mirabent and Ribeiro-Soriano, 2015) affirms that assessing university quality has become a key issue among stakeholders. In assessing quality (Buela-Casal et al., 2007) emphasize the need for rigorous comparisons of global institutions. Hence we find that the quality of a university is often portrayed through its position when ranked against other universities (Shin, 2011). Whether a university is good or not, it is often depicted with respect to its position when ranked against other universities. Accordingly, certain variables become very important in determining a university's position when ranked against other universities. Such ranking enables universities to benchmark their performance against other universities thus allowing them to make strategic decisions which address the identified gaps hence in turn improve on their competitiveness.

Some university ranking procedures continue to face controversy and criticism (Coates, 2007, Shin et al., 2011, Shin, 2011). For example, in China, there has been regular ranking of universities, mainly spearheaded by Wu

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Shulian. However, Wu Shulian ranking has suffered much criticism and controversies over the years. In 2009 the credibility of Wu Shulian came under the limelight following reports of fee-for-ranking scandals[1].

According to our knowledge, whilst there are several ranking methods in greater parts of the world (Coates, 2007), there seems to be little evidence to suggest the application of Principal Components Analysis (PCA) as a university ranking methodology. Therefore, this paper seeks to demonstrate the application of PCA as a ranking tool, in this case we rank world universities. Building upon variables and secondary data available from the QS World University Rankings (QSWUR), we demonstrate a PCA ranking process for universities in greater parts of the world. Our aim is not to disqualify QS world Rankings but to demonstrate the use of PCA as a ranking tool. We conclude by comparing our results with QS world rankings results.

Ranking of Universities.

As previously highlighted that rankings are useful tools for decision making by stakeholders (Altbach, 2012, Hou et al., 2012), this has seen the emergence of university ranking systems across different parts of the world. "A global educational phenomenon triggered the start of ranking systems' development and their proliferation all around the world" (Lukman et al., 2010). Globally, there exists more than 30 national university rankings (Saisana et al., 2011). It should be noted that different procedures may produce different ranks for the same institution due to methodological differences (Alma et al., 2016). The methodological differences stem from selection of indicators, assigned weights, data collection and analytical methods. (Alma et al., 2016)

It remains a challenge to define quality because of the diverse and relative nature of most quality indicators. (Olcay and Bulu, 2016) argue that despite the challenge of defining quality, a ranking system provides a reflection of a university's quality level in a measure that is often easy to understand by various stakeholders at different levels, hence the growing interest in rankings over the decades.

Whilst there has been an increase in the number of ranking procedures, (Huang, 2011) argues that data validity and reliability are indispensable for trustworthy rankings. In this paper, we use QS World University Ranking (QSWUR) variables. QSWUR is the first international rankings to be independently audited and approved by the IREG Observatory on Academic Rankings and Excellence making it one of the leading world university ranking institution. Drawing from QS World University ranking, we establish academic reputation, employer reputation, student-to-faculty ratio, citations per faculty, international faculty ratio and international student ratio as our variables of interest. These variables are explained in the following section.

Data Analysis:-

Variables:-

In this demonstration, we adopt the six performance indicator variables according to the QS World university rankings. According to QSWUR, these six performance variables cover the aspects of research, teaching, employability and internationalisation[2]. The variables are explained below.

Academic Reputation:-This is measured through a global survey, in which academics identify institutions which they believe are currently conducting the best work within their respective academic fields. Regional weights are applied to counter any discrepancies in response rates. Higher values of academic reputation indicate better performance.

Employer reputation:-Just like academic reputation, employer reputation is also based on a global survey. Here, employers identify universities which they perceive to be producing the best graduates. Unique to QSWUR, this variable aims to provide the level to which universities are viewed in the job market as reputable. Higher values indicate better performance.

Student-to-faculty ratio:-This represents a measure of the number of academic staff employed relative to the number of students enrolled. This measure provides information on how a university is best equipped to provide small class sizes and a good level of individual supervision. Lower values indicate better performance.

[1]http://chinadigitaltimes.net/2009/05/universities-in-fee-for-ranking-scandal/

[2]http://www.topuniversities.com/qs-world-university-rankings/methodology

Citations per faculty:-This variable measures a university's research impact by counting total citations in relation to the number of academic faculty members of the university. Scopus, a large database for citations and abstracts provides such citation counts. Higher values indicate better performance.

International faculty ratio:-This reflects an institution's success in attracting academics from other countries as a measure of internationalisation. Higher values indicate better performance.

International student ratio:-This reflects an institution's success in attracting academics from other countries as a measure of internationalisation. Higher values indicate better performance.

In this demonstration, we use the above collection of variables to reflect university performance and consequently rank the universities via PCA. Whilst these variables are quality indicators, unlike QSWUR which assigns weights to these variables, this paper is interested in their joint contribution to quality in a multivariate sense. We do so by applying PCA, that is, investigating correlations between variables and further obtaining an overall measure by collapsing these correlated variables. We explain PCA in the section that follows.

Principal Component Analysis:-

Principal Component Analysis (PCA) is a nonparametric variable reduction technique which seeks to collapse a set of correlated variables into fewer uncorrelated variables as linear combinations of the original values. The extracted fewer variables should account for most of the variation occurring in the originally observed variables such that they can be used to provide summarised measures of quality.

Given a random vector $\boldsymbol{X} = (X_1, X_2, \ldots, X_p)^t$ consisting of p random variables, having covariance matrix Σ and eigenvalue-eigenvector pairs(λ_1, e_1), $(\lambda_2, e_2) \ldots, (\lambda_p, e_p)$, where $\lambda_1 \geq \lambda_2 \geq \ldots \geq \lambda_p \geq 0$, the i^{th}principal component, say L_i, is defined as $L_i = e_i^t X_1 = e_{i1}X_1 + e_{12}X + \cdots + e_{ip}X_p$ for $i = 1, 2, \ldots p$where $(e_{i1}, e_{i2}, \ldots, e_{ip})$ are the components of eigenvector e_i^t. This presents principal components as linear combinations of the original random variables.

Further, it can be shown that:-

1. If $Y_i = a_i^t X = a_{i1}X_1 + a_{i2}X_2 + \cdots + a_{ip}X_p$ is any other linear combination of these original variables, then for the first principal component, $Var(L_1) = \lambda_1 \geq Var(Y_i)$. From this, we observe that that the principal components $L_i$can be used to capture the important signals aggregately contained in the original variables $X_1, X_2, \ldots, X_P$.
2. $Cov(L_i, L_j) = 0 \; for \; i \neq j$. Here we observe that this can be done without redundancy.
3. $\Sigma_{i=1}^{p} Var(X_i) = \Sigma_{i=}^{p} Var(L_i)$, thus providing a means of identifying the contribution of each principal component since;

$$\begin{aligned} Total\ Variance &= Var(X_1) + Var(X_2) + \cdots + Var(X_P) \\ &= Var(L_1) + Var(L_2) + \cdots + Var(L_P) \\ &= \lambda_1 + \lambda_2 + \ldots + \lambda_p \end{aligned}$$

In the event that the first few principal components capture a significant fraction of the total variance, then the new variables can replace the original variables without much loss of information. Standardization is required where variables are measured on different scales. However, in this study our data is standardized since scores for all variables are expressed as a percentage.

Ranking Universities Using First Principal Component Analysis:-

PCA is widely used in various research or statistical sectors. On ranking, (Manage & Scariano, 2013) demonstrated the use of PCA in ranking batsmen and bowlers in the Indian Cricket Premier League.

In this paper we apply PCA to rank world universities. First, university scores for the variables identified in 3.1 were obtained from QS datasets[3]. We limit our analysis to 398 universities that have a full set of values. Some universities had missing values on some of the variables hence their exclusion from the analysis. For standardization, these

[3]http://www.iu.qs.com/

values were already converted into percentage scores by QS. Respective values for the variables discussed in 3.1 were arranged into a $(6x1)^t$ column vector of the form (Academic reputation, Employer reputation, Student to faculty ratio, Citations per faculty, International Faculty ratio, International students ratio) for each of the 398 universities and we refer to these as the quality vectors. In this study, we choose to use the following proxies;-

Proxy	Variable
AR	Academic Reputation
ER	Employer Reputation
SFR	Student to Faculty Ratio
CPF	Citations per faculty
IFR	International Faculty Ratio
ISR	International Students Ratio

By using SPSS statistical software, a 6X6 correlation matrix is obtained to reflect the inherent correlation structure of these variables. Table 2 presents the correlation structure.

Table 2: Correlation Matrix

		AR	ER	SFR	CPF	IFR	ISR
Correlation	AR	1.000	.693	.193	.353	.092	.150
	ER	.693	1.000	.145	.192	.218	.298
	SFR	.193	.145	1.000	-.056	.008	.091
	CPF	.353	.192	-.056	1.000	.235	.227
	IFR	.092	.218	.008	.235	1.000	.662
	ISR	.150	.298	.091	.227	.662	1.000

We observe in Table 2 that the variables are correlated to each other thus making it plausible to apply the non parametric PCA analysis. Further, in Table 3 we present the ordered eigenvalues and percentage of variability which is attributed to each.

Table 3:- Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.288	38.137	38.137	2.288	38.137	38.137
2	1.347	22.448	60.585	1.347	22.448	60.585
3	1.030	17.167	77.752	1.030	17.167	77.752
4	.749	12.478	90.230			
5	.332	5.541	95.771			
6	.254	4.229	100.000			
Extraction Method: Principal Component Analysis.						

The results in Table 3 show that about 78% of total variation is explained by the first 3 principal components. Also, the first 3 components are the only ones whose values are greater than one. Accordingly, we provide the eigenvalue eigenvector pairs for these 3 variables and present them in Table 4 below.

Table 4:- Component Matrix[a]

	Component		
	1	2	3
AR	.711	.582	-.145
ER	.754	.415	-.005
SFR	.221	.344	.793
CPF	.534	-.029	-.563
IFR	.632	-.645	.128
ISR	.692	-.549	.218
Extraction Method: Principal Component Analysis. A. 3 components extracted.			

In table 5 we proceed to calculate the coefficients of the principal components which we identified in Table 5.
Table 1:- Variable coefficients.

	Component			*Coefficients*		
	1	*2*	*3*	*1/√λ1*	*2/√λ2*	*3/√λ3*
AR	*0.711*	*0.582*	*-0.145*	*0.470047331*	*0.501463337*	*-0.14287275*
ER	*0.754*	*0.415*	*-0.005*	*0.498474947*	*0.357572655*	*-0.00492665*
SFR	*0.221*	*0.344*	*-0.793*	*0.146104726*	*0.296397574*	*-0.78136612*
CPF	*0.534*	*-0.029*	*-0.563*	*0.353031328*	*-0.024987*	*-0.55474038*
IFR	*0.632*	*-0.645*	*0.128*	*0.417820*	*-0.555745*	*0.12612215*
ISR	*0.692*	*-0.549*	*0.218*	*0.457486291*	*-0.473030*	*0.21480178*

Therefore, according to results in **Error! Reference source not found.**, we establish the following linear equations;
$L_1 = 0.470AR + 0.498ER + 0.146SFR + 0.353CPF + 0.418IFR + 0.457ISR$
$L_2 = 0.501AR + 0.358ER + 0.296SFR - 0.024CPF - 0.556IFR - 0.473ISR$
$L_3 = -0.143AR - 0.005ER - 0.781SFR - 0.554CPF + 0.126IFR + 0.215ISR$

Further, for each university we calculate an L value being the total of $L_1, L_2,$ and L_3 multiplied by the respective percentages of variation given in **Error! Reference source not found.**, where;
$L = 0.38137L_1 + 0.22448L_2 + 0.17167L_3$. Also represented as;

$$L = [0.38137\ (0.470AR + 0.498ER + 0.146SFR + 0.353CPF + 0.418IFR + 0.457ISR)]$$
$$+ \quad [0.22448(0.501AR + 0.358ER + 0.296SFR - 0.024CPF - 0.556IFR - 0.473ISR)]$$
$$+ \quad [0.17167(-0.143AR - 0.005ER - 0.781SFR - 0.554CPF + 0.126IFR + 0.215ISR)]$$

We conclude the analysis by ranking universities according to their respective L values. The higher the L value, the better the rank. The ranking results are presented in Appendix A.

Results and Discussion:-

In Appendix A we provide PCA ranks against QS ranks. This paper attributes the differences between PCA ranking and QS ranking to the differences in their respective methodologies. As stated earlier on, "ranking systems produce different ranks for the same institution due to methodological differences which stem from selection of indicators (variables), weights, data collection and analysis" (Alma et al., 2016).

Unlike in QS (and other similar methodologies) where the weights of the variables are predetermined[4], PCA, by first extracting principal components, it establishes a relative scale of weights, not as predetermined but as a result. PCA thus establishes an objective performance scale for ranking. Where weights are pre-determined, the choice of weights is often subjective and arbitrary, with little or no theoretical or empirical basis, hence small changes in the variable weights often alter the results without any tangible change between institutions.

Conclusion:-

Using the case of world universities, this paper has demonstrated how to apply Principal component analysis as a ranking tool. This paper sought not to disqualify other methodologies, but rather, to demonstrate PCA as a valuable ranking methodology. Although re-ranking was performed in this paper, such was only limited to comparing the PCA ranks against the QS ranks only for illustrative purposes. In this paper we therefore conclude that, by considering principal components which account for greatest variations, PCA provides an objective methodology for ranking. We consider PCA to be robust since it does not establish weights a priori, instead, the ranking is based on the principal components which maximize the explanation of the variances.

[4] AR 40%; ER 10%; SFR 20%; CPF 20%; IFR 5%; ISR 5%.

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Appendix:-

Table 2:- Ranking (**based on unrounded L value). (*rounded off to 1 d.p)

PC	Institute	QS	AR	ER	SF	CPF	IF	IS	*L*1	*L*2	*L*3	* *L*
1	ETH ZURICH (SWISS FEDERAL INSTITUTE OF TECHNOLOGY)	9	99.9	99	78.6	98.8	100	98	229.193	4.4323	-97.2325	71.7
2	MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)	1	100	100	100	100	100	95.5	232.1435	12.3285	-115.1675	71.5
3	IMPERIAL COLLEGE LONDON	8	99.9	100	99.6	79.6	100	100	226.9372	10.6099	-102.806	71.3
4	UCL (UNIVERSITY COLLEGE LONDON)	7	99.9	99.8	98.6	88	95.5	99.9	227.6863	12.5012	-107.0318	71.3
5	UNIVERSITY OF CAMBRIDGE	3=	100	100	100	93.7	96.2	96.6	228.8339	14.0722	-111.9196	71.2
6	UNIVERSITY OF OXFORD	6	100	100	100	88.9	97.8	96.6	227.8083	13.2978	-109.0588	71.1
7	THE UNIVERSITY OF MELBOURNE	42	99.8	99	39.5	80.9	80	97	209.1532	4.6363	-59.2974	70.6
8	NATIONAL UNIVERSITY OF SINGAPORE (NUS)	12	100	100	92.9	78.9	100	92	222.2876	12.1523	-98.578	70.6

9	THE UNIVERSITY OF SYDNEY	45	99.5	99	39.7	72.7	99	89	210.3133	-2.3007	-54.1756	70.4
10	THE UNIVERSITY OF NEW SOUTH WALES (UNSW)	46	96.9	99	36.1	80	10	92	212.8621	-6.389	-54.5726	70.4
11	UNIVERSITY OF CALIFORNIA, BERKELEY (UCB)	26	100	99.9	46.9	99.9	96.8	79.3	215.5648	6.0193	-77.5267	70.3
12	AUSTRALIAN NATIONAL UNIVERSITY (ANU)	19	99.6	94	68.9	89.4	10	96	221.4327	0.6045	-84.6628	70.0
13	LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE (LSE)	35	93.8	100	65	77.6	100	100	218.2688	-2.7286	-73.5688	70.0
14	UNIVERSITY OF EDINBURGH	21	99.7	98	85.2	71.5	93	97	217.0124	10.4962	-88.1983	70.0
15	UNIVERSITY OF HONG KONG (HKU)	30	99.5	97	84.5	56.2	10	98	214.3413	6.1417	-78.1012	69.7
16	THE UNIVERSITY OF MANCHESTER	33	99.3	99	79.4	61.9	83	97	209.3092	14.9536	-79.5555	69.5
17	HARVARD UNIVERSITY	2	100	100	98.6	100	99.9	76	222.9858	21.1932	-118.2792	69.5
18	NANYANG TECHNOLOGICAL UNIVERSITY (NTU)	13	95.3	97.5	94.2	86.5	100	94	222.3917	8.3955	-102.7966	69.1
19	STANFORD UNIVERSITY	3=	100	100	99.5	99.9	97.6	72.8	220.6581	24.2544	-119.9045	69.0
20	MONASH UNIVERSITY	67	94.5	96	26.6	67.1	98	93	204.1932	-10.7326	-39.4021	68.7
21	KING'S COLLEGE LONDON (KCL)	19	95.2	95	89.9	77.5	95	98	217.7397	7.2868	-94.1066	68.5
22	UNIVERSITY OF TORONTO	34	99.9	95	82.6	57.3	97	90	208.7032	10.6496	-79.3694	68.4
23	THE UNIVERSITY OF WARWICK	48	90.4	99	62.4	66.3	93	98	208.5676	-0.5251	-66.0178	68.1
24	MCGILL UNIVERSITY	24	99.1	94	80.9	70.4	88	92	209.4761	13.0262	-85.7809	68.1
25	THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (HKUST)	28	94.3	91.8	65.8	89.4	100	97	217.3314	-4.0411	-81.4063	68.0
26	ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL)	14	89.1	93.6	93.6	99.3	100	100	224.7083	0.5703	-107.2231	67.4
27	UNIVERSITY OF CHICAGO	10	99.9	96.3	93.8	91.5	73.4	81.6	208.8771	30.6869	-111.9236	67.3
28	CORNELL UNIVERSITY	17	99.9	96.7	73.9	97.1	90.2	66	208.0409	22.8433	-100.7233	67.2
29	CALIFORNIA INSTITUTE OF TECHNOLOGY (CALTECH)	5	99.8	89.6	100	100	90.2	85.2	218.0668	18.8258	-118.5362	67.0
30	YALE UNIVERSITY	15	100	10	10.9	71.2	89	65	204.0806	32.8229	-106.990	66.8

											3	
31	THE UNIVERSITY OF QUEENSLAND (UQ)	46	95.6	91	41.9	84	99	82	205.4584	-3.3854	-63.1216	66.8
32	COLUMBIA UNIVERSITY	22	100	99	100	67	33	89	189.5848	52.8538	-106.55	65.9
33	UNIVERSITY OF BRISTOL	37	92.1	98	79.7	69	86	81	201.282	16.9537	-85.8264	65.8
34	UNIVERSITY OF BRITISH COLUMBIA	50	99.6	95	47.7	73	85	63	191.9781	18.9632	-67.9102	65.8
35	THE UNIVERSITY OF AUCKLAND	82	92.7	93	27.3	58	85	88	190.8159	-2.5857	-37.6351	65.7
36	PRINCETON UNIVERSITY	11	100	98.5	92.9	100	47.2	68.2	195.8134	51.9596	-122.1372	65.4
37	UNIVERSITY OF PENNSYLVANIA	18	98.8	97	100	80	52	66	190.5061	51.1218	-116.328	64.2
38	UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)	27	100	99.7	74.2	89.6	57.4	49	185.4988	50.514	-104.6197	64.1
39	DURHAM UNIVERSITY	61	75.4	98	48.7	90.6	91	88	202.1255	-7.4131	-69.0056	63.6
40	THE UNIVERSITY OF NOTTINGHAM	70	80.6	96	61.1	61.9	87	87	193.3345	1.6256	-64.1872	63.1
41	PEKING UNIVERSITY	41	99.9	99	73.9	70.9	50	45	174.0692	56.2295	-94.9399	62.7
42	ECOLE POLYTECHNIQUE PARISTECH	40	73.5	99	99.2	75.7	96	88	206.0072	4.679	-99.2728	62.6
43	UNIVERSITY OF BIRMINGHAM	76	82.4	94	60.1	57.6	85	83	188.825	4.9888	-62.6869	62.4
44	NEW YORK UNIVERSITY (NYU)	53	98.8	97	94.9	35.7	15	82	165.5062	64.3917	-88.8369	62.3
45	DELFT UNIVERSITY OF TECHNOLOGY	64	83.9	89	31.7	96.1	93	71	194.0017	-4.3809	-63.3906	62.1
46	THE CHINESE UNIVERSITY OF HONG KONG (CUHK)	51	95.4	85	69.2	61.2	97	63	189.1795	12.9773	-76.08	62.0
47	TSINGHUA UNIVERSITY	25	99.6	99.5	87.5	84.2	47.8	36.1	175.3387	65.7477	-115.9403	61.7
48	FUDAN UNIVERSITY	51	94.1	96	61.2	81	52	49	174.4214	45.6457	-89.4919	61.4
49	UNIVERSITY OF MICHIGAN	30=	99.9	91.4	81.3	84.5	65.4	42.2	180.7911	48.4849	-107.7376	61.3
50	CARNEGIE MELLON UNIVERSITY	62	88.1	83	35.1	99.6	20	99	177.6948	23.577	-71.7926	60.7
51	TECHNISCHE UNIVERSITÄT MÜNCHEN	60	90.4	98	90.2	36	53	65	169.2836	46.039	-83.191	60.6
52	JOHNS HOPKINS UNIVERSITY	16	97.2	74	100	84.9	96.6	71.2	200.0229	15.3644	-111.9246	60.5
53	UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	59	97.7	75	22.2	98.2	62	70	179.521	12.6609	-63.2165	60.5
54	LUND UNIVERSITY	70	89.3	84	58.1	58.1	83	72	181.0214	9.873	-64.6029	60.2

55	LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN	75	98.1	91	49.8	56.9	57	39	161.1471	44.6982	-69.0742	59.6
56	UNIVERSITY OF LEEDS	87	81.7	90	57.9	55.2	75	73	176.8719	12.211	-62.541	59.5
57	SEOUL NATIONAL UNIVERSITY (SNU)	36	99.2	96.6	84.2	79	30.2	33.2	162.707	74.8144	-113.2516	59.4
58	ECOLE NORMALE SUPÉRIEURE, PARIS (ENS PARIS)	23	89.6	78.9	91.9	100	55.6	82.6	191.1106	27.9548	-115.6166	59.3
59	UNIVERSITY OF AMSTERDAM	55	95.1	88	54.3	84.1	70	37	172.8264	36.4327	-86.2587	59.3
60	THE UNIVERSITY OF TOKYO	39	100	99.9	96.3	64.9	22.4	25.9	154.9192	88.1063	-117.5735	58.7
61	THE UNIVERSITY OF SHEFFIELD	80	79	79	66.3	59	81	95	184.8094	-3.9286	-65.4678	58.4
62	UNIVERSITY OF GLASGOW	62	87.5	68	64.1	64.1	86	94	186.739	-7.1619	-67.5826	58.0
63	PURDUE UNIVERSITY	89	81	77	38.3	73.3	94	78	182.9932	-11.4943	-53.7633	58.0
64	THE UNIVERSITY OF ADELAIDE	11	75.2	76	42.3	53.8	93	98	182.7721	-22.364	-40.9749	57.6
65	TRINITY COLLEGE DUBLIN (TCD)	78	82.5	73	60.7	63	95	84	185.3352	-9.0725	-64.2154	57.6
66	KYOTO UNIVERSITY	38	99.9	96	94.1	71.5	17	21	151.2581	90.7513	-121.028	57.3
67	UNIVERSIDAD DE BUENOS AIRES	12	95.7	98	61.1	2.8	30	38	134.2925	66.5803	-51.7392	57.3
68	DUKE UNIVERSITY	29	96.4	84.6	99.8	85.4	15.2	57.4	164.7412	70.473	-125.2074	57.2
69	SHANGHAI JIAO TONG UNIVERSITY	70	88.8	95	47.3	83.8	60	17	159.4847	48.6337	-85.0781	57.1
70	KATHOLIEKE UNIVERSITEIT LEUVEN	82	92.4	76	15.6	92.6	80	41	168.8042	11.7044	-57.5866	57.1
71	UNIVERSITY OF TEXAS AT AUSTIN	77	98.5	85	20.9	97.5	26	27	150.0415	56.2561	-75.6528	56.9
72	RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG	66	95.5	80	77.6	43.3	49	59	159.5167	42.8821	-79.6018	56.8
73	UNIVERSITÉ DE MONTRÉAL	11	79.5	75	32.1	62	85	80	173.7659	-10.1506	-43.4674	56.5
74	NORTHWESTERN UNIVERSITY	32	94	81.1	92.3	96.4	29.9	51.7	168.1979	60.0565	-124.4565	56.3
75	RHEINISCH-WESTFÄLISCHE TECHNISCHE HOCHSCHULE AACHEN	145	78.5	97.6	30.8	53	31.4	50.7	145.0007	40.6746	-50.2734	55.8
76	HUMBOLDT-UNIVERSITÄT ZU BERLIN	12	96.6	76	23.9	41.7	55	42	144.4605	30.8166	-39.704	55.2
77	GEORGIA INSTITUTE OF TECHNOLOGY (GEORGIA TECH)	84	81.8	78.2	44.5	89.9	6.5	86.9	158.0516	35.2741	-77.145	55.0
78	THE UNIVERSITY OF WESTERN AUSTRALIA	98	79.3	70	35.2	76.1	99	65	175.9367	-12.9725	-54.6758	54.8

	(UWA)												
79	UNIVERSITY OF ALBERTA	96	79.5	68	56.7	56.5	90	82	175.431	-9.5672	-58.0944	54.8
80	UNIVERSITÉ PARIS 1 PANTHÉON-SORBONNE	24	81.1	90	4.5	6.5	24	64	125.7456	30.4252	-2.2748	54.4
81	UNIVERSITY OF BATH	15	51.3	89	37.9	68.2	90	90	177.2181	-25.9347	-44.38	54.1
82	BOSTON UNIVERSITY	91	78.5	85	62.5	71.2	11	73	152.0613	45.7884	-82.6793	54.1
83	UNIVERSITY OF CALIFORNIA, SAN DIEGO (UCSD)	44	98	71.3	66.8	94.5	31.3	42.4	157.1389	54.6702	-105.8345	54.0
84	UNIVERSITY OF ST ANDREWS	68	65.9	68	79	84.5	96	99	192.3322	-22.1748	-84.6266	53.8
85	UNIVERSITÄT WIEN	15	82.5	57	37.9	25	94	93	164.1756	-24.4151	-22.9644	53.2
86	UNIVERSITY OF COPENHAGEN	69	89.1	77	99.9	30.8	82	37	157.58	37.8155	-89.7559	53.2
87	KAIST - KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	43	89.4	86.6	78.5	100	28.9	17.3	151.8921	72.3769	-122.5648	53.1
88	BROWN UNIVERSITY	49	81.9	71.2	81.7	96.6	49.4	66.2	170.8812	29.6073	-108.9344	53.1
89	UNIVERSIDADE DE SÃO PAULO (USP)	14	95.3	94	35.2	33.6	10	6.	116.5384	82.0333	-57.4618	53.0
90	UNIVERSITY OF WATERLOO	15	61	79	14.9	88.6	78	75	168.9867	-18.0707	-43.7	52.9
91	UNIVERSITY OF ZURICH	85	78.1	72	90.8	36	10	62	169.2846	5.9577	-76.3316	52.8
92	FREIE UNIVERSITÄT BERLIN	11	93.3	62	19.7	61.2	60	54	149.6647	14.3085	-43.6897	52.8
93	UNIVERSITY OF SOUTHAMPTON	81	72.9	64	76.6	63.5	89	92	179.2008	-12.6686	-74.6646	52.7
94	PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE	17	90.7	98	38.2	14	19	8	113.756	77.2293	-47.0033	52.7
95	KIT, KARLSRUHER INSTITUT FÜR TECHNOLOGIE	93	64	96.2	84.7	65.8	57.1	48.6	159.6592	35.2602	-94.5933	52.6
96	KTH, ROYAL INSTITUTE OF TECHNOLOGY	92	64.1	88	67.7	80.9	86	46	169.4961	11.9915	-86.517	52.5
97	UNIVERSITY OF TECHNOLOGY, SYDNEY (UTS)	218	48.6	85.9	22.4	42.3	95.6	93.2	166.3757	-36.5212	-16.2243	52.5
98	UNIVERSITY OF YORK	10	67.7	70	51.5	76.6	87	81	174.7581	-14.3688	-64.2784	52.4
99	NATIONAL TAIWAN UNIVERSITY (NTU)	70	98	75	46.1	85.9	18	23	138.8327	66.2002	-90.6679	52.2
100	TOKYO INSTITUTE OF TECHNOLOGY	56	86.2	84.5	87.2	80.4	23.8	32.1	148.3255	68.9027	-115.4936	52.2
101	LANCASTER UNIVERSITY	12	59.1	69	45.1	82.2	91	95	179.8609	-30.3747	-57.5012	51.9

102	UPPSALA UNIVERSITY	10	85.7	65	47	64	28	75	148.9842	27.1479	-64.9815	51.8
103	UNIVERSITÉ PARIS-SORBONNE (PARIS IV)	22	86	78	11	7.	31	52	120.7217	32.412	-10.5928	51.5
104	UNIVERSITÉ CATHOLIQUE DE LOUVAIN (UCL)	14	76.5	72	55	26	78	65	152.2919	5.1463	-45.0913	51.5
105	UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO (UNAM)	160	95.9	92.5	49.4	5.3	14.7	3.6	108.0111	85.7801	-53.0676	51.3
106	ERASMUS UNIVERSITY ROTTERDAM	12	55.1	90	65	67	69	65	162.9624	8.443	-74.0577	51.3
107	UNIVERSITY OF CALIFORNIA, DAVIS (UCD)	85	85.8	62	35	93	65	46	158.4276	14.7233	-73.9638	51.0
108	CITY UNIVERSITY OF HONG KONG	57	72.7	50	81	93	10	95	189.743	-24.1501	-93.2461	50.9
109	CARDIFF UNIVERSITY	12	63.8	73	66	53	71	85	164.3691	-3.7145	-64.0062	50.9
110	POLITECNICO DI MILANO	18	64.7	89	12	66	38	48	138.6754	22.5714	-41.409	50.8
111	OSAKA UNIVERSITY	58	92.5	80.9	86.8	69.2	15.9	19.8	136.5584	81.1309	-113.4992	50.8
112	UNIVERSITY OF WISCONSIN-MADISON	54	97.4	62.1	85.7	66.9	51.6	36.1	150.8982	49.0259	-103.9699	50.7
113	PENNSYLVANIA STATE UNIVERSITY	10	85.7	73	34	86	13	45	138.4508	48.314	-75.4293	50.7
114	THE HONG KONG POLYTECHNIC UNIVERSITY	11	69.1	59	47	70	99	82	172.8877	-25.8209	-55.8015	50.6
115	LOMONOSOV MOSCOW STATE UNIVERSITY	10	84.2	82	99	8.	13	56	129.4015	66.6987	-81.2154	50.4
116	UNIVERSITY OF EXETER	16	52	76	44	66	85	87	168.1384	-23.5517	-50.0187	50.2
117	UNIVERSIDAD DE CHILE	20	84.6	92	18	16	12	13	105.7545	67.6248	-31.8893	50.0
118	UNIVERSITY OF GRONINGEN	10	69.1	58	81	48	93	94	172.4852	-18.0713	-68.0835	50.0
119	TECHNISCHE UNIVERSITÄT BERLIN	17	70.5	82	39	36	39	56	135.246	26.9158	-44.5797	50.0
120	SUNGKYUNKWAN UNIVERSITY	11	68.9	99	86	43	20	27	130.9003	70.6077	-93.8636	49.7
121	UNIVERSITY COLLEGE DUBLIN (UCD)	15	62.2	72	39	63	90	63	160.4522	-13.3819	-49.9927	49.6
122	KOREA UNIVERSITY	10	78.4	84	83	42	21	39	133.0234	62.73	-89.0894	49.5
123	RMIT UNIVERSITY	27	44.5	85	23	23	10	80	153.8836	-34.6752	-8.1212	49.5
124	YONSEI UNIVERSITY	10	79.4	86	83	40	14	35	129.1142	69.8941	-90.1091	49.5
125	QUEEN MARY, UNIVERSITY OF LONDON (QMUL)	10	63.4	57	72	57	96	99	175.01	-28.3155	-64.2315	49.4
126	WASEDA UNIVERSITY	21	73.3	85	36	10	35	40	119.1	39.1349	-32.1387	48.7
127	UNIVERSITY OF LIVERPOOL	15	55.1	69	66	50	76	95	163.551	-16.6822	-58.0171	48.7

128	ZHEJIANG UNIVERSITY	11	80.2	80	34.2	90.3	14	20	129.7648	59.2369	-82.391	48.6
129	UTRECHT UNIVERSITY	94	83.7	69	47.1	84.5	59	17	143.4156	37.0562	-84.5793	48.5
130	OHIO STATE UNIVERSITY	99	82	57	71.9	47	80	55	153.0472	10.9736	-72.2065	48.4
131	AARHUS UNIVERSITY	10	74.9	63	43.2	81.7	71	47	153.34	9.467	-71.0363	48.4
132	UNIVERSITY OF SOUTHERN CALIFORNIA	13	70.4	65	42.9	76.7	34	74	147.2564	15.0357	-66.0731	48.2
133	UNIVERSITY OF WASHINGTON	65	95.5	55	54.1	94.5	8.	43	137.3329	56.3465	-98.103	48.2
134	NEWCASTLE UNIVERSITY	16	49.6	73	61.9	55.9	83	88	163.8372	-20.2694	-57.0804	48.1
135	UNIVERSITY OF READING	15	51.1	68	51.5	67.7	86	89	166.5894	-26.9418	-55.1785	48.0
136	UNIVERSITY OF ABERDEEN	13	53.6	63	65.2	64.1	93	94	171.0585	-29.2762	-62.4276	47.9
137	UNIVERSITÉ LIBRE DE BRUXELLES (ULB)	20	56.4	62	36.6	31.7	93	94	156.6448	-36.4079	-22.3008	47.7
138	UNIVERSITY OF ST GALLEN (HSG)	32	15.3	95	6.3	65.2	10	96	164.2664	-58.8427	-10.7774	47.6
139	CENTRALESUPÉLEC	15	30.4	10	86.3	74.2	16	94	153.2404	20.8487	-91.2396	47.5
140	TECHNISCHE UNIVERSITÄT WIEN	19	47.2	71	10.6	90.8	62	87	157.175	-25.9196	-39.0461	47.4
141	UNIVERSITAT DE BARCELONA (UB)	16	86.9	74	34.1	38.8	5.	27	111.5469	62.989	-54.4725	47.3
142	CHALMERS UNIVERSITY OF TECHNOLOGY	13	48.6	86	71.9	76.2	78	44	156.6291	9.9138	-86.3012	47.1
143	LEIDEN UNIVERSITY	95	87.1	55	43.6	83.2	66	21	141.6851	27.242	-79.935	46.4
144	TOHOKU UNIVERSITY	74	86	72.1	97.1	61.4	16.5	18.4	127.4824	78.2886	-116.4742	46.2
145	UNIVERSIDAD COMPLUTENSE DE MADRID (UCM)	226	76.9	79	30.5	13.8	3.5	38.6	103.9126	55.3019	-34.1174	46.2
146	MICHIGAN STATE UNIVERSITY	16	69.8	59	24.4	70.9	61	55	142.108	1.3012	-48.8555	46.1
147	UNIVERSITY OF GENEVA	89	69.8	34	62.3	86.5	10	99	176.5109	-38.8488	-72.8447	46.1
148	CITY UNIVERSITY LONDON	30	29.6	79	26.7	37.9	92	10	155.2623	-48.704	-13.2737	46.0
149	MACQUARIE UNIVERSITY	22	48.4	63	14.1	58.8	10	78	154.8627	-42.7675	-21.6263	45.7
150	TECNOLÓGICO DE MONTERREY (ITESM)	23	43.6	93	71.5	4.2	83	47	135.4455	7.3955	-44.1178	45.7
151	AMERICAN UNIVERSITY OF BEIRUT (AUB)	26	27.8	92	62.7	18.1	98	73	150.0007	-24.5449	-35.2953	45.6
152	MAASTRICHT UNIVERSITY	16	37.5	68	71.5	60.6	94	99	168.9989	-36.834	-61.6971	45.6
153	UNIVERSITY OF CAPE TOWN	17	68.9	60	36.2	53.2	70	52	139.9562	1.8416	-47.836	45.6

154	UNIVERSITY OF OTAGO	17	62.7	53	30	60	10	66	153.9538	-28.6553	-39.4929	45.5
155	OXFORD BROOKES UNIVERSITY	32	39.3	81	21	22	65	83	135.5997	-21.5819	-8.4846	45.4
156	QUEEN'S UNIVERSITY OF BELFAST	18	49.9	56	52	50	97	94	160.8139	-39.2681	-43.5657	45.0
157	UNIVERSIDAD NACIONAL DE COLOMBIA	29	71.2	92	14	7.	15	2.	91.4826	63.2646	-23.7585	45.0
158	UNIVERSITY OF CALGARY	20	54.9	67	31	53	69	64	141.3772	-9.1834	-39.9356	45.0
159	UNIVERSITY OF BASEL	13	54.5	48	38	96	10	85	170.1091	-42.1196	-60.8796	45.0
160	TECHNISCHE UNIVERSITÄT DARMSTADT	24	34.2	88	17	78	59	59	142.287	-9.3823	-42.1102	44.9
161	UNIVERSITY OF HELSINKI	96	83.7	64	94	36	59	14	130.1634	51.9099	-95.833	44.8
162	TEXAS A&M UNIVERSITY	15	76.3	68	13	89	8.	24	117.9841	48.4156	-65.0835	44.7
163	UNIVERSITY OF WOLLONGONG	24	31.1	78	31	63	99	69	154.4955	-36.9253	-37.3691	44.2
164	MCMASTER UNIVERSITY	14	61.7	60	64	53	91	50	148.5963	-4.5021	-66.6969	44.2
165	UNIVERSITI MALAYA (UM)	14	62	56	94	23	80	77	148.5833	-2.6977	-69.0522	44.2
166	UNIVERSIDADE ESTADUAL DE CAMPINAS (UNICAMP)	19	75.1	79	31	43	12	7.	103.6423	63.8402	-56.2714	44.2
167	QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)	26	47.7	71	21	38	95	54	139.5625	-24.0289	-21.2153	44.2
168	NANJING UNIVERSITY	13	76.7	63	34	86	38	16	127.0688	40.1282	-78.0403	44.1
169	WESTERN UNIVERSITY	19	50.3	62	23	78	95	57	152.2164	-27.8498	-45.0216	44.1
170	SCIENCES PO PARIS	22	36.8	78	92	4.	64	97	142.6823	-7.8502	-51.6037	43.8
171	UNIVERSITÉ PIERRE ET MARIE CURIE (UPMC)	13	72.3	52	32	89	36	53	135.901	17.1069	-69.7204	43.7
172	UNIVERSITÀ DI BOLOGNA (UNIBO)	20	87.5	62	16	32	9.	18	98.2818	56.8081	-38.445	43.6
173	VICTORIA UNIVERSITY OF WELLINGTON	22	51.2	58	19	54	10	66	147.0846	-35.8629	-25.9249	43.6
174	UNIVERSIDAD DE LOS ANDES COLOMBIA	28	65.5	87	25	8.	34	4.	97.8066	50.1046	-29.1856	43.5
175	UNIVERSITY OF LAUSANNE	14	53.2	55	95	38	97	77	156.2808	-17.5139	-74.5167	42.9
176	UNIVERSITÉ PARIS DAUPHINE	36	35.6	80	27	13	43	86	122.6334	-10.4836	-10.2572	42.7
177	INDIAN INSTITUTE OF TECHNOLOGY BOMBAY (IITB)	202	62.3	87.5	27.7	65.6	5	1.5	102.8325	65.6726	-66.37	42.6
178	LOUGHBOROUGH UNIVERSITY	22	38.9	69	37	59	79	71	145.1765	-24.349	-42.741	42.6
179	UNIVERSITY OF STRATHCLYDE	24	37.4	69	37	50	85	73	144.9529	-29.211	-35.892	42.6
180	UNIVERSITY OF CANTERBURY	21	49.1	57	27	61	99	61	147.0773	-32.508	-36.5196	42.5

181	UNIVERSITY OF MINNESOTA	120	84.1	46	23	97.4	7.	37	120.816	41.4359	-75.8417	42.4
182	QUEEN'S UNIVERSITY	20	53.8	67	18	75.4	78	28	134.0245	-2.5449	-47.8294	42.3
183	UNIVERSITÄT FRANKFURT AM MAIN	24	64.7	64	33.5	25.9	20	53	109.5959	27.6837	-35.9273	41.8
184	UNIVERSITY OF CALIFORNIA, SANTA BARBARA (UCSB)	129	84.4	28.9	10.8	100	62.7	44.7	137.5735	-2.5769	-58.5378	41.8
185	VU UNIVERSITY AMSTERDAM	17	64.3	66	39.5	66.1	44	18	119.3768	33.0422	-67.5245	41.4
186	UNIVERSIDAD AUTÓNOMA DE MADRID	18	72.5	68	51.2	37.9	15	18	103.6963	58.1464	-65.9103	41.3
187	KEIO UNIVERSITY	21	65.8	82	57.5	15.7	13	8.	95.3721	67.5376	-59.9066	41.2
188	UNIVERSITY OF CALIFORNIA, IRVINE (UCI)	16	63.3	40	22.7	95.7	52	69	141.128	-11.8488	-57.7749	41.2
189	UNIVERSITY OF OSLO	13	71.5	45	61.2	61.1	67	45	135.4861	10.0269	-73.9732	41.2
190	SIMON FRASER UNIVERSITY	22	41.6	45	9.1	88.2	93	91	155.5645	-57.7243	-30.6487	41.1
191	SAPIENZA - UNIVERSITÀ DI ROMA	21	85.7	54	5.8	44.9	2.	17	93.117	53.3992	-37.8362	41.0
192	TECHNICAL UNIVERSITY OF DENMARK	11	44.1	52	95.1	80.2	97	74	164.0816	-22.0221	-97.1924	40.9
193	UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL	79	84.1	45.7	81.7	79.9	38.1	21.2	128.0327	49.5491	-110.9685	40.9
194	INDIAN INSTITUTE OF TECHNOLOGY DELHI (IITD)	17	55.3	81	32.2	96.2	3.	3.	108.3958	60.4917	-85.5439	40.2
195	TECHNISCHE UNIVERSITÄT DRESDEN	22	49.2	67	15.2	81.4	30	42	119.9744	14.467	-51.4783	40.2
196	UNIVERSITY OF GHENT	12	71.5	54	90.2	40.8	55	26	124.0016	37.6636	-90.9536	40.1
197	GEORGETOWN UNIVERSITY	21	49.8	66	58.7	38.2	44	54	122.1128	14.6757	-57.2101	40.0
198	KYUSHU UNIVERSITY	14	69.3	66	98.8	31.7	17	24	109.9814	65.3946	-97.4132	39.9
199	UNIVERSITY OF NEWCASTLE	25	43	59	29.7	49.1	96	52	135.6558	-27.9901	-33.4213	39.7
200	VRIJE UNIVERSITEIT BRUSSEL (VUB)	19	41.4	64	95	24	77	69	137.6654	-4.4606	-69.0961	39.6
201	NAGOYA UNIVERSITY	120	73.7	58	93.7	45.7	19.4	26.1	113.3722	61.1944	-101.2707	39.6
202	HOKKAIDO UNIVERSITY	13	69.8	64	85.9	48.4	15	18	109.6674	64.9128	-98.1459	39.5
203	UNIVERSITAT AUTÓNOMA DE BARCELONA	19	78	47	29.2	50.2	21	31	105.952	36.7225	-53.0725	39.5
204	UNIVERSITY COLLEGE CORK (UCC)	23	44.4	60	43.2	47.4	92	47	134.4784	-18.1924	-44.7699	39.5
205	UNIVERSITÄT FREIBURG	13	74.1	37	59.2	64.7	58	45	130.2157	12.7317	-75.8351	39.5
206	UNIVERSITÄT MANNHEIM	39	28.9	88	25	29.2	32	50	108.4913	10.7047	-25.3028	39.4

207	UNIVERSITY OF ILLINOIS, CHICAGO (UIC)	18	59	46	47	59	61	57	130.9174	-2.4653	-58.6017	39.3
208	UNIVERSITÄT HAMBURG	21	68.9	55	40	29	27	37	104.7303	32.7643	-46.6253	39.3
209	CURTIN UNIVERSITY	28	38.9	54	30	39	10	72	138.8032	-42.8604	-23.6196	39.3
210	HERIOT-WATT UNIVERSITY	31	19.5	63	37	45	96	99	148.0153	-58.7384	-23.6129	39.2
211	UNIVERSITY OF SUSSEX	18	48.4	29	39	77	10	96	156.4497	-56.7569	-47.2984	38.8
212	AALTO UNIVERSITY	13	50.5	58	92	63	75	38	138.0898	11.7904	-97.1675	38.6
213	UNIVERSITY OF SURREY	24	34.8	46	47	49	94	97	148.1271	-51.8089	-36.4506	38.6
214	POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY (POSTECH)	87=	56.1	64.9	99.6	100	49.7	10	133.8734	46.0587	-133.1222	38.5
215	EINDHOVEN UNIVERSITY OF TECHNOLOGY	117	50.5	57.3	99.4	69.6	100	26.6	145.3078	5.3841	-105.3788	38.5
216	UNIVERSITÄT INNSBRUCK	29	43.5	39	32	24	95	98	138.4836	-54.5629	-12.1576	38.5
217	DEAKIN UNIVERSITY	32	41.2	54	11	40	98	55	128.9373	-38.3138	-13.2554	38.3
218	STOCKHOLM UNIVERSITY	18	76.9	50	38	53	6.	21	98.345	53.3152	-65.7739	38.2
219	UNIVERSITÄT STUTTGART	25	44.2	62	64	23	38	69	117.2054	9.2294	-50.4493	38.1
220	CHULALONGKORN UNIVERSITY	25	76.3	59	30	14	19	5.	85.2915	54.8476	-39.5258	38.1
221	UNIVERSIDAD DE NAVARRA	26	34.4	85	84	14	19	49	106.7764	37.8536	-65.7026	37.9
222	WAGENINGEN UNIVERSITY	13	55.6	40	99	52	42	86	136.732	5.7651	-91.489	37.7
223	UNIVERSITY OF SOUTH AUSTRALIA (UNISA)	28	34	57	37	42	10	61	135.0624	-36.4948	-32.6368	37.7
224	KING FAHD UNIVERSITY OF PETROLEUM & MINERALS (KFUPM)	199	37.2	51.7	83.9	39.4	100	73.9	144.9605	-29.5201	-64.4431	37.6
225	NATIONAL TSING HUA UNIVERSITY	15	65.2	49	31	99	39	16	118.6051	27.8403	-81.2274	37.5
226	HANYANG UNIVERSITY	19	44.3	67	94	34	27	53	116.2011	33.3795	-84.7388	37.3
227	SOAS - SCHOOL OF ORIENTAL AND AFRICAN STUDIES, UNIVERSITY OF LONDON	275=	42.2	36.5	52.2	18.8	100	100	139.7686	-53.6908	-23.3005	37.3
228	ASTON UNIVERSITY	34	23.3	53	22	51	93	93	140.397	-59.5719	-17.7532	37.1
229	UNIVERSITÄT KÖLN	33	52.3	67	25	20	26	29	93.3723	29.1146	-29.4277	37.1
230	EBERHARD KARLS UNIVERSITÄT TÜBINGEN	17	64.5	51	82	27	47	32	112.1512	32.8801	-76.1013	37.1
231	UNIVERSITY OF BERN	16	43.8	45	46	99	99	43	146.6484	-26.3377	-76.1184	36.9

232	AMERICAN UNIVERSITY IN CAIRO	34	36.8	77	49	6.1	93	12	109.7642	2.9423	-33.0485	36.8
233	UNIVERSITY OF MARYLAND, COLLEGE PARK	126=	70	38	63.3	82.3	31.2	37	120.0683	30.5874	-93.3453	36.6
234	INDIANA UNIVERSITY BLOOMINGTON	26	61.6	55	31	33.1	20	32	95.9096	32.5104	-42.6478	36.6
235	CHARLES UNIVERSITY	27	57.9	55	48	13.2	18	48	96.4728	30.1604	-41.2367	36.5
236	DARTMOUTH COLLEGE	158	41.1	65.3	86.4	83.8	6.3	51.6	120.2468	39.6221	-108.2196	36.2
237	ROYAL HOLLOWAY UNIVERSITY OF LONDON	23	32.3	35	36.9	77.9	97	98	151.2565	-62.8323	-43.3126	36.1
238	GRIFFITH UNIVERSITY	32	34.8	47	21.9	42.1	96	69	130.2993	-46.4714	-18.5029	36.1
239	GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN	16	74.2	35	74.9	30.2	44	37	110.1201	28.6959	-72.2608	36.0
240	POLITECNICO DI TORINO	31	38.8	64	4.2	77.2	2.5	53	103.7485	14.8497	-40.0977	36.0
241	WESTFÄLISCHE WILHELMS-UNIVERSITÄT MÜNSTER	25	49.7	69	54	31.5	28	17	97.2123	40.7951	-59.6505	36.0
242	NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY	254=	43.4	52.9	33	56.9	75.9	41.1	122.1548	-12.5567	-45.3664	36.0
243	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA	113=	72.1	48.7	62.8	97.9	11.3	3.5	108.19	61.8576	-111.6609	36.0
244	UNIVERSITY OF VIRGINIA	17	53.7	49	70.9	62.6	53	35	121.1663	17.5092	-83.534	35.8
245	UNIVERSITY OF TWENTE	18	37.4	39	44.2	97.5	81	73	145.6277	-36.1228	-68.1599	35.7
246	UNIVERSITÉ DE STRASBOURG	24	72.3	27	20.6	37.2	42	54	106.0523	1.9353	-30.2439	35.7
247	RICE UNIVERSITY	10	50.5	20	84.2	99.7	86	87	157.0764	-34.0074	-98.7414	35.3
248	UNIVERSITY OF WAIKATO	33	25.4	49	23.6	53.6	96	77	134.7674	-54.394	-22.6642	35.3
249	ÉCOLE DES PONTS PARISTECH	31	15.9	74	93.6	11.2	27	96	117.777	1.1143	-57.7668	35.2
250	UNIVERSITY OF LEICESTER	23	32.8	40	64	50	80	97	140.1945	-41.8757	-51.6184	35.2
251	LA TROBE UNIVERSITY	39	30.9	41	19.2	29.2	93	92	129.358	-60.492	-4.3215	35.0
252	BEIJING NORMAL UNIVERSITY	23	56.4	48	42.2	45.8	58	22	107.9579	13.7643	-54.376	34.9
253	TEL AVIV UNIVERSITY	20	58	47	12.7	98.9	34	10	107.016	23.5545	-66.6635	34.7
254	BOSTON COLLEGE	28	34.7	55	27.1	65.5	94	27	123.029	-21.4078	-45.1705	34.4
255	AALBORG UNIVERSITY	35	33.5	57	29.7	33.4	69	48	111.8213	-16.2276	-27.5629	34.3
256	UNIVERSITY OF COLORADO AT BOULDER	17	56	51	70.1	61.5	40	17	108.6249	35.3156	-88.3219	34.2

257	UNIVERSITY OF WARSAW	34	50.9	64	40	10	17	22	82.9971	40.0617	-37.8963	34.1
258	INSTITUT NATIONAL DES SCIENCES APPLIQUÉES DE LYON (INSA)	387=	16.8	68.7	59.5	20.4	41	84.1	113.5685	-12.4415	-37.2695	34.1
259	BRUNEL UNIVERSITY	33	21.9	40	29	56	95	98	139.7007	-67.1358	-23.822	34.1
260	WASHINGTON UNIVERSITY IN ST. LOUIS	110=	60.4	33.3	99.9	76.7	20.8	58.7	122.1522	30.5815	-114.0761	33.9
261	UNIVERSITY OF FLORIDA	18	65.3	44	68	48	17	23	98.188	46.6198	-82.2272	33.8
262	UNIVERSITY OF ESSEX	30	32	28	26	55	98	99	139.0677	-69.2699	-21.8158	33.7
263	UNIVERSITY OF NOTRE DAME	19	42.2	48	50	84	83	23	126.5258	-6.2437	-76.6559	33.7
264	RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITÄT BONN	210	67.1	39.4	60.3	29	13.4	39.1	93.6689	38.9304	-62.8577	33.7
265	UNIVERSITY OF OTTAWA	28	46.7	34	13	63	75	49	117.5344	-26.7745	-32.4207	33.2
266	UNIVERSIDAD CARLOS III DE MADRID	31	41.8	63	62	11	36	29	93.1545	27.5265	-49.9686	33.1
267	RADBOUD UNIVERSITY NIJMEGEN	17	47	42	60	85	52	38	121.4571	6.9966	-86.0182	33.1
268	AMERICAN UNIVERSITY	37	34.9	70	43	21	12	38	87.8959	29.833	-41.3275	33.1
269	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	198	54.2	42.4	33.6	87.5	60	11.1	112.535	11.5687	-72.7327	33.0
270	UNIVERSITY OF EAST ANGLIA (UEA)	23	36.7	28	35	78	71	85	133.3581	-42.8807	-49.7503	32.7
271	TILBURG UNIVERSITY	29	31.1	53	24	72	78	30	117.4318	-17.5778	-47.7843	32.6
272	WUHAN UNIVERSITY	27	49.9	45	29	50	64	20	104.5237	2.978	-45.9987	32.6
273	UNIVERSITY OF GOTHENBURG	24	52.8	45	53	38	35	33	98.8099	21.8769	-59.3487	32.4
274	UNIVERSITY OF CALIFORNIA, RIVERSIDE (UCR)	265=	32.5	45.3	21	87.1	89	36.1	125.3464	-29.9338	-50.5529	32.4
275	INDIAN INSTITUTE OF TECHNOLOGY MADRAS (IITM)	254=	41.4	66.9	31.1	82.3	7.9	4	91.4969	45.6376	-74.2826	32.4
276	UNIVERSITY OF INDONESIA	35	50.5	61	43	1.	38	5.	80.0449	35.895	-36.4751	32.3
277	MASSEY UNIVERSITY	33	38.7	41	37	25	95	48	114.9581	-31.1224	-26.654	32.3
278	ARIZONA STATE UNIVERSITY	24	60.3	33	12	75	8.	39	95.2222	20.2996	-50.4705	32.2
279	HEBREW UNIVERSITY OF JERUSALEM	14	66.9	33	82	59	52	12	108.351	33.7501	-97.8983	32.1
280	NATIONAL UNIVERSITY OF IRELAND, GALWAY (NUIG)	27	34.4	45	72	25	89	53	119.8329	-20.6032	-52.7972	32.0

281	GEORGE WASHINGTON UNIVERSITY	32	41.5	50	38	34	22	49	94.6509	13.6072	-41.9354	32.0
282	NORTHEASTERN UNIVERSITY	36	23.1	49	37	47	35	88	112.8772	-22.6012	-35.6729	31.9
283	UNIVERSITY OF TURKU	23	41.9	65	92	24	33	12	94.1611	46.5033	-85.2089	31.7
284	UNIVERSITY OF PITTSBURGH	133=	58.2	29	93.8	67.6	64.6	33	121.4374	14.156	-103.9412	31.6
285	UNIVERSITÀ DEGLI STUDI DI MILANO	30	61.7	43	17	39	15	12	79.0022	36.1011	-39.6902	31.4
286	UNIVERSITY OF ANTWERP	20	43.4	40	95	27	65	51	114.9042	3.2468	-76.7336	31.4
287	UNIVERSITY OF MASSACHUSETTS, AMHERST	243=	53.7	42.6	23.8	76.9	23.3	16.8	94.4913	26.4525	-62.5347	31.2
288	UNIVERSITY OF THE WITWATERSRAND	33	41.6	43	27	36	88	24	106.2591	-16.9534	-32.0616	31.2
289	UNIVERSITY OF KENT	36	27	32	40	31	94	89	126.0118	-58.5211	-21.7811	31.2
290	KING SAUD UNIVERSITY (KSU)	23	42.2	45	90	15	97	24	113.185	-1.9429	-67.5106	31.1
291	DUBLIN CITY UNIVERSITY (DCU)	35	24.1	49	48	33	84	58	116.7697	-31.7447	-36.5274	31.1
292	KING ABDUL AZIZ UNIVERSITY (KAU)	30	34.4	35	70	10	96	69	120.3316	-36.2203	-38.6068	31.1
293	UNIVERSITY OF TSUKUBA	21	52.1	45	79	32	17	32	92.365	40.201	-78.3698	30.8
294	UNIVERSITY OF ARIZONA	21	61	30	31	71	25	24	95.3091	23.2784	-64.7774	30.5
295	KYUNG HEE UNIVERSITY	29	34	60	72	28	15	39	90.8955	32.3658	-67.0275	30.4
296	INDIAN INSTITUTE OF TECHNOLOGY KANPUR (IITK)	271=	45.4	59.7	36.4	66.5	2	1.9	81.5618	51.2857	-71.3996	30.4
297	LINKÖPING UNIVERSITY	28	32.5	60	72	33	37	26	95.8112	25.3553	-70.0833	30.2
298	BIRKBECK COLLEGE, UNIVERSITY OF LONDON	29	30	16	23	76	93	97	135.9898	-72.4478	-31.6416	30.2
299	INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR (IITKGP)	286=	37.2	61.7	19.9	91.3	5.9	1.2	86.3595	40.577	-70.7488	29.9
300	UNIVERSITAT POMPEU FABRA	29	42.4	31	30	51	80	39	110.0544	-23.4758	-39.6349	29.9
301	UNIVERSITI KEBANGSAAN MALAYSIA (Lukman et al.)	31	49	34	50	14	72	33	98.2411	-5.1505	-37.6317	29.8
302	UNIVERSITI SAINS MALAYSIA (USM)	28	50.2	41	44	36	29	27	88.5504	22.4641	-52.6343	29.8
303	LAVAL UNIVERSITY	32	37.6	39	39	38	67	38	103.0584	-12.2791	-40.7703	29.5
304	UNIVERSIDADE NOVA DE LISBOA	35	35.7	51	48	27	39	32	90.4073	12.7096	-45.9989	29.4
305	ECOLE NORMALE SUPÉRIEURE DE LYON	18	58.3	26	10	22	53	38	103.1426	19.7073	-83.711	29.4

306	NATIONAL CHIAO TUNG UNIVERSITY	18	37.5	27	64	96	49	63	124.1786	-11.5634	-89.9074	29.3
307	BEN GURION UNIVERSITY OF THE NEGEV	25	31.5	29	49	67	85	60	123.5152	-36.4908	-56.4387	29.2
308	UNIVERSITI PUTRA MALAYSIA (UPM)	33	43.5	33	48	20	44	57	95.9854	-4.4517	-37.5698	29.2
309	NATIONAL CHENG KUNG UNIVERSITY	22	49.7	35	51	68	19	32	95.885	24.7088	-75.8343	29.1
310	HONG KONG BAPTIST UNIVERSITY (HKBU)	28	28.1	19	52	55	98	90	132.5416	-62.0697	-44.019	29.1
311	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	37	33	64	21	59	1.	9.	76.7549	38.9935	-52.2665	29.1
312	SUN YAT-SEN UNIVERSITY	30	45.3	42	24	58	43	13	90.4511	13.4	-49.6325	29.0
313	UNIVERSITI TEKNOLOGI MALAYSIA (UTM)	30	32.8	35	77	12	74	66	110.0644	-20.8014	-49.197	28.9
314	STELLENBOSCH UNIVERSITY	30	39.9	37	11	81	57	20	101.2204	-6.4182	-48.4377	28.8
315	UNIVERSITÀ DI PISA	36	59.4	38	12	30	7.	11	67.8969	36.7734	-31.3438	28.8
316	UNIVERSITÄT ERLANGEN-NÜRNBERG	29	38.4	39	4.	98	30	26	98.0231	2.7396	-54.3528	28.7
317	UNIVERSITY OF LIEGE	26	32.2	36	48	73	23	66	106.0835	-2.436	-66.4911	28.5
318	UNIVERSIDAD AUSTRAL	30	36.5	65	92	2.	8.	15	74.6353	57.1707	-74.8472	28.4
319	RUTGERS - THE STATE UNIVERSITY OF NEW JERSEY, NEW BRUNSWICK	269=	52.7	31.7	38.8	51.3	28.8	27.8	89.0723	18.8427	-56.8118	28.4
320	DALHOUSIE UNIVERSITY	27	37	15	28	72	99	63	125.2496	-54.5946	-41.4298	28.4
321	NORTH CAROLINA STATE UNIVERSITY	30	36.1	38	31	65	33	41	96.7715	0.9663	-52.6163	28.1
322	TONGJI UNIVERSITY	34	37.2	46	35	45	48	14	89.0059	10.3591	-48.5635	27.9
323	UNIVERSITÉ JOSEPH FOURIER - GRENOBLE 1	23	52.9	23	39	71	17	44	94.9003	14.0465	-66.528	27.9
324	UNIVERSITÉ PARIS DIDEROT - PARIS 7	26	65.8	5.	17	56	38	47	93.7922	-4.9788	-39.3182	27.9
325	UNIVERSITAT POLITÈCNICA DE CATALUNYA	299=	43	42.9	62.1	30.2	13.9	35.9	83.5179	29.8489	-62.1245	27.9
326	UNIVERSITY OF BERGEN	18	47.3	27	86	59	78	21	112.4637	3.7114	-92.4609	27.9
327	SAINT-PETERSBURG STATE UNIVERSITY	25	49.3	46	97	4.	5.	26	76.6268	54.4353	-79.1894	27.8
328	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO	32	65.6	32	33	14	13	5.	65.3832	44.4462	-41.3784	27.8
329	UNIVERSITY OF PORTO	30	49.3	39	21	61	8.	14	77.8604	32.689	-54.2814	27.7
330	UNIVERSITÉ PARIS-SUD 11	24	46.3	26	66	46	37	48	98.9473	7.6073	-69.1147	27.6
331	UNIVERSITY OF TASMANIA	37	29.4	20	28	42	85	79	114.7073	-55.3882	-22.0892	27.5

332	UNIVERSITY OF SOUTHERN DENMARK	36	29.7	34	47	31	73	54	104.6889	-26.4937	-37.7967	27.5
333	AL-FARABI KAZAKH NATIONAL UNIVERSITY	27	47.6	44	92	1.	29	19	79.9388	41.2896	-71.7167	27.4
334	UNIVERSITÀ DEGLI STUDI DI PADOVA (UNIPD)	30	64.3	30	29	29	3.	10	66.4881	44.3165	-46.0741	27.4
335	UNIVERSITY OF VICTORIA	31	31.7	24	12	81	84	44	113.2622	-41.3604	-39.1125	27.2
336	EMORY UNIVERSITY	165	41.8	24.5	85.1	89.6	45	45.2	115.3668	6.3524	-106.8134	27.1
337	BRANDEIS UNIVERSITY	38	19.1	40	33	63	22	75	100.3017	-15.451	-45.4082	27.0
338	VIRGINIA POLYTECHNIC INSTITUTE (VIRGINIA TECH)	338=	38.7	42	36.4	48.5	24.2	25.3	83.2176	18.613	-52.5528	26.9
339	UNIVERSITY OF DUNDEE	26	34.5	16	79	32	84	79	118.8642	-38.6165	-57.142	26.9
340	UNIVERSITY OF COIMBRA	36	44	36	28	37	26	25	78.8789	15.7803	-40.6031	26.7
341	UNIVERSITÉ DE MONTPELLIER	37	45.2	30	17	45	12	40	78.5028	11.8333	-35.3068	26.5
342	BILKENT UNIVERSITY	39	34.7	44	30	37	59	9.	85.2872	4.0493	-40.3577	26.5
343	UNIVERSITY OF CALIFORNIA, SANTA CRUZ (UCSC)	269=	40.1	30	17.1	93	75.8	4.2	102.7164	-10.4717	-60.3076	26.5
344	UNIVERSITÉ AIX-MARSEILLE	36	58.3	19	25	22	7.	44	72.0823	17.8199	-30.384	26.3
345	LEIBNIZ UNIVERSITÄT HANNOVER	36	29.2	41	2.	91	14	32	88.2549	4.0929	-48.3961	26.3
346	UNIVERSITÄT BREMEN	35	39.5	33	53	21	42	34	84.5624	7.1164	-46.6868	25.8
347	JAMES COOK UNIVERSITY (JCU)	38	22.6	31	35	48	91	45	107.7024	-40.4245	-36.64	25.7
348	UNIVERSITY OF ROCHESTER	19	38.9	15	99	59	35	77	112.2803	-3.4315	-95.2659	25.7
349	NOVOSIBIRSK STATE UNIVERSITY	31	35.1	43	89	9.	8.	45	79.0489	33.0611	-69.3685	25.7
350	BAUMAN MOSCOW STATE TECHNICAL UNIVERSITY	33	29.7	65	99	1.	1.	9	66.3607	62.6409	-80.9786	25.5
351	UNIVERSITÄT KONSTANZ	31	42.9	22	45	35	59	35	91.6506	-7.8208	-46.0377	25.3
352	UNIVERSITY AT BUFFALO SUNY	33	28.8	13	17	78	70	72	112.701	-51.0467	-36.577	25.2
353	JOHANNES GUTENBERG UNIVERSITÄT MAINZ	37	36.4	33	49	25	37	34	81.5142	7.096	-45.5784	24.9
354	WASHINGTON STATE UNIVERSITY	36	39.1	28	32	40	67	18	88.2053	-7.7212	-41.2112	24.8
355	NANKAI UNIVERSITY	27	40	37	43	75	13	9.	80.2879	32.0241	-77.4629	24.5
356	NATIONAL TAIWAN NORMAL UNIVERSITY	37	40.5	24	53	16	18	56	78.4458	7.4932	-41.9711	24.4
357	XI'AN JIAOTONG UNIVERSITY	33	33.1	46	56	45	15	12	74.6295	34.6059	-69.8316	24.2

358	UNIVERSITÄT LEIPZIG	38	41.9	24	9.8	63.1	16	33	77.2234	5.9927	-39.3787	24.0
359	TUFTS UNIVERSITY	25	27.6	30	64.4	80.3	30	45	99.2158	3.5512	-85.0713	24.0
360	UNIVERSITY OF STIRLING	38	17.9	21	36.2	62.3	71	67	107.1046	-46.0669	-41.655	23.4
361	UNIVERSITÉ PARIS DESCARTES	38	37.8	21	31.6	45.1	16	46	77.4411	3.7778	-43.0693	23.0
362	HARBIN INSTITUTE OF TECHNOLOGY	29	29.2	36	49.4	78.3	23	18	84.7941	18.6932	-79.4427	22.9
363	MAHIDOL UNIVERSITY	29	49.1	32	85.6	7.6	13	9	63.9116	49.3055	-74.1412	22.7
364	SWANSEA UNIVERSITY	40	21.8	18	46.4	41.9	63	71	100.169	-39.0871	-39.2785	22.7
365	IOWA STATE UNIVERSITY	35	36.4	21	20.7	71	19	34	80.1341	3.0063	-50.8591	22.5
366	NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY	260	34.8	27.6	74.7	58.2	24.4	30.4	85.6436	20.0844	-86.0875	22.4
367	MOSCOW STATE INSTITUTE OF INTERNATIONAL RELATIONS – MGIMO UNIVERSITY	397=	20.2	47.9	97.6	1	4.9	43.2	69.7414	32.976	-70.0023	22.0
368	LINCOLN UNIVERSITY	37	11.1	16	70.6	38.9	81	88	112.1762	-55.6158	-49.0823	21.9
369	KOBE UNIVERSITY	36	38.4	34	65.2	21.5	12	14	63.64	36.8325	-63.9378	21.6
370	UNIVERSITY OF IOWA	31	40.4	17	52.1	51.3	11	39	76.2132	15.5441	-65.2537	21.4
371	CASE WESTERN RESERVE UNIVERSITY	21	29.1	12	97.7	65.6	36	65	102.4719	-4.7462	-98.2319	21.2
372	STONY BROOK UNIVERSITY	37	26.4	11	50.5	49.4	13	84	87.2336	-16.0862	-50.8027	20.9
373	RENSSELAER POLYTECHNIC INSTITUTE	34	19.3	25	27.2	98.1	11	49	87.6957	-5.3175	-66.4253	20.8
374	UNIVERSITY OF CONNECTICUT	39	23.1	19	29.4	66.2	84	23	94.6212	-32.5114	-47.0872	20.7
375	UNIVERSITY OF MIAMI	28	30	24	94.2	41.4	5.	49	80.0613	24.0749	-89.5695	20.6
376	VANDERBILT UNIVERSITY	216=	46.6	15.8	100	43.4	5.8	28.4	75.0938	40.9034	-102.0496	20.3
377	TAMPERE UNIVERSITY OF TECHNOLOGY	35	16.7	33	89.2	24.8	72	25	88.4513	-6.2434	-71.3183	20.1
378	EWHA WOMANS UNIVERSITY	35	30.1	32	78.5	25.5	14	24	67.4491	29.9129	-72.9506	19.9
379	UMEÅ UNIVERSITY	31	31	27	84.3	30.2	35	10	70.9962	25.0344	-80.1627	18.9
380	BEIHANG UNIVERSITY	38	24.4	37	51.8	58.5	2.	6	62.2767	35.2748	-74.9118	18.8
381	UNIVERSITY OF TARTU	40	32.5	26	67.5	19.5	22	14	61.4174	25.8568	-62.3416	18.5
382	UNIVERSITÉ PAUL SABATIER TOULOUSE III	39	42.3	12	61.6	10.6	19	29	60.0761	19.3712	-51.6767	18.4

383	UNIVERSITY OF JYVÄSKYLÄ	31	31.2	23	88.7	25.9	40	12	70.7257	21.1653	-80.397	17.9
384	UNIVERSITY OF HAWAII AT MĀ • NOA	32	28.5	11	67.6	46.2	64	26	84.4945	-11.2055	-68.7202	17.9
385	UNIVERSITY OF OULU	35	30.2	21	61.4	43.1	42	7.	70.0312	12.7021	-69.3	17.7
386	UNIVERSITY OF EASTERN FINLAND	34	26.8	21	77.5	36.1	46	15	73.9552	10.1723	-75.2533	17.6
387	UNIVERSITÄT JENA	38	30	19	70.1	29.4	10	34	64.4596	19.561	-66.6335	17.5
388	UNIVERSITY OF UTAH	36	23.8	16	45	68.5	29	28	76.0084	-0.6799	-66.6005	17.4
389	NATIONAL SUN YAT-SEN UNIVERSITY	37	32.7	15	29.6	69.4	24	9.	66.2774	11.1819	-61.2612	17.3
390	ECOLE NORMALE SUPÉRIEURE DE CACHAN	29	28.3	15	91.7	43.9	21	33	74.0163	17.7628	-90.0325	16.8
391	L.N. GUMILYOV EURASIAN NATIONAL UNIVERSITY	37	29.7	27	99.9	1.4	27	8.	58.2588	35.1249	-77.9309	16.7
392	NATIONAL CENTRAL UNIVERSITY	39	30	16	43.4	54.9	19	16	63.5365	14.2321	-62.5141	16.7
393	UNIVERSITY OF KANSAS	39	23.6	17	76.4	32.7	23	26	64.6253	14.3612	-72.5858	15.4
394	UNIVERSITÄT ULM	33	14.1	15	79.5	59.2	48	34	82.9293	-8.5543	-83.4981	15.4
395	HIROSHIMA UNIVERSITY	34	33.8	10	88.1	23.9	13	15	54.9227	31.5509	-81.9297	14.0
396	NATIONAL YANG MING UNIVERSITY	338=	18.6	16.1	99.4	45.8	9.6	11.5	56.7079	32.6285	-102.0628	11.4
397	TOKYO MEDICAL AND DENTAL UNIVERSITY	39	16.5	10	10.0	34.2	5.	16	49.4394	29.81	-95.224	9.2
398	YESHIVA UNIVERSITY	38	4	8.9	97.8	64.3	1.7	18.5	52.454	22.9001	-108.4288	6.5