University Rankings for Higher Education Institutes in Thailand

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https://doi.org/10.12982/CMUJASR.2016.0004

ABSTRACT

This paper provides a brief assessment of world university ranking systems and their indicators, focusing on the two most reliable and well-recognized ranking systems – QS University Rankings (QS) and Times Higher Education (THE) World University Rankings; and recommends these as the most appropriate for higher education institutes in Thailand to follow as a reference. QS and THE have kept their indicators and weightings relatively static over the past three years and reflect the many factors that are important to developing a world-class university. Thai universities should adopt these university ranking indicators into their world-class initiative strategies. Finally, this paper draws conclusions about the fifteen indicators that Thai universities should focus on to improve their quality and rankings.

Keywords: University rankings, Indicators, World-class university

INTRODUCTION

Several organizations rank universities, including Quacquarelli Symonds (QS) University Rankings (QS), Times Higher Education (THE) World University Rankings, The Academic Ranking of World Universities (ARWU), SCImago Institutions Rankings (SIR), Center for World University Rankings (CWUR), University Ranking by Academic Performance (URAP), U.S. News & World Report, CWTS Leiden Ranking (Netherlands), and four international colleges and universities. With many choices, universities and others interested in rankings typically select one reliable and well-recognized ranking system to follow as a reference. In recent years, most Thai universities have used either the QS or THE rankings as their reference; stemming from when these two popular rankings used to be jointly published. Although published separately since 2009, their methodologies remain similar. THE is a leading university ranking organization and its World University Rankings are globally recognized by students, researchers, governments bodies, funders, and, of course, universities themselves (Elsevier, 2016). Research performance data account for a significant proportion of THE's overall rankings, with a weight of 38.5% spread across citations (30%), research productivity (6%), and international collaboration (2.5%).

Both QS and Times Higher Education announce their Asia rankings in June and world rankings in September, while QS announces its rankings by subject in March and Times Higher Education in September. (The most recent results of the world, Asian and subject rankings of QS and Times Higher Education are presented in the appendix.)

Table 1. QS Rankings indicators.

Indicators	QS World (weight, as %)			QS Asia (weight, as %)		
	2014-15	2015-16	2016-17	2014	2015	2016
Academic reputation	40	40	40	30	30	30
Employer reputation	10	10	10	10	10	20
Faculty student ratio	20	20	20	20	20	15
Papers per faculty		-		15	15	10
Citations per paper		-		15	15	10
Citations per faculty	20	20	20		-	-
International faculty	5	5	5	2.5	2.5	2.5
International students	5	5	5	2.5	2.5	2.5
Inbound exchange		-		2.5	2.5	2.5
Outbound exchange		-		2.5	2.5	2.5
Faculty with Ph.D.						5

UNIVERSITY RANKINGS INDICATORS

Tables 1 (QS) and 2 (THE) show the ranking indicators and weightings for the past three years.

QS and Times Higher Education use many similar indicators, although the terminology varies somewhat – for example, reputation survey, faculty-to-student ratio, papers per faculty, research productivity, citations, international faculty, and international students. However, some of the indicators are unique to each ranking system – employer reputation, inbound exchange, outbound exchange, and faculty with Ph.D are unique to QS; while doctorate-to-bachelor's ratio, doctorates-awarded-to-academic-staff ratio, institutional income, research income, international collaboration, and industry income are unique to Times Higher Education. These differences are why older universities well known to peers tend to rank higher than newer universities with

Table 2. Times Higher Education (THE) rankings indicators.

Indicators	THE World (weight, as %)			THE Asia (weight, as %)		
	2014-15	2015-16	2016-17	2014	2015	2016
Teaching	**30**	**30**	**30**	**30**	**30**	**25**
Reputation survey	15	15	15	15	15	10
Staff-to-student ratio	4.5	4.5	4.5	4.5	4.5	4.5
Doctorate-to-bachelor's ratio	2.25	2.25	2.25	2.25	2.25	2.25
Doctorates-awarded–to–academic-staff ratio	6	6	6	6	6	6
Institutional income	2.25	2.25	2.25	2.25	2.25	2.25
Research	**30**	**30**	**30**	**30**	**30**	**30**
Reputation survey	18	18	18	18	18	15
Research income	6	6	6	6	6	7.5
Research productivity	6	6	6	6	6	7.5
Citations	**30**	**30**	**30**	**30**	**30**	**30**
International outlook	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**
International-to-domestic-student ratio	2.5	2.5	2.5	2.5	2.5	2.5
International-to-domestic-staff ratio	2.5	2.5	2.5	2.5	2.5	2.5
International collaboration	2.5	2.5	2.5	2.5	2.5	2.5
Industry income	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**7.5**

QS, and universities that emphasize technology transfer to industry tend to rank higher with Times Higher Education.

QS has not adjusted its indicators or weights for the World University Rankings in three years. However, they did add one new indicator (faculty with Ph.D. at 5%) and adjusted other weightings for their Asia University Rankings in 2016-17, increasing the weight of the employer reputation indicator from 10% to 20% and reducing the weights of the faculty-per- student, paper-per-faculty, and citations-per-paper indicators by 5%.

The Times Higher Education World Rankings made even fewer changes to their indicators and weights over the past three years, and likewise only to the Asia rankings system. They reduced the weight of the research reputation survey by 3% and, correspondingly, increased the weights of the research income and research productivity indicators by 1.5% each. In addition, they reduced the weight of the teacher reputation survey by 5% (from 15 to 10%), adding this to the industry income indicator (from 2.5 to 7.5%).

Significantly, Times Higher Education changed the citation database for its World and Asia rankings in 2016-17 from ISI to Scopus, bringing it in line with QS. Furthermore, because Times Higher Education included books and book chapters for the first time, more common with the arts, humanities, and social sciences, research in these fields now carries more weight.

Salmi (2009), based on an assessment of indicators, chose the Times Higher Education rankings as the most relevant in developing its guidelines for the Challenge of Establishing World-Class Universities, and indicated that there are:

> *…three complementary sets of factors at play in top universities: (a) a high concentration of talent (faculty and students), (b) abundant resources to offer a rich learning environment and to conduct advanced research, and (c) favorable governance features that encourage strategic vision, innovation, and flexibility and that enable institutions to make decisions and to manage resources without being encumbered by bureaucracy.*

As the QS rankings emphasizes survey-based, reputation indicators more than THE, it may be more susceptible to reputational bias; in addition, changes in perceived reputation may lag changes in performance metrics. THE expanded its rankings from the top-200 to the top-400 institutions in 2015. QS has ranked a top-600 since its inception in 2010.

WORLD UNIVERSITY RANKINGS BY SUBJECT

QS uses four components to rank universities by subject:

1. Academic reputation
2. Employer reputation
3. Research citations per paper
4. H-index (measures both the

productivity and impact of published research)

The QS World University Rankings by Subject weight the indicators for each subject differently, based on the different publication rates in each field. (QS, 2017).

The Times Higher Education University Ranking by Subject uses five main components, similar to its World and Asia University Rankings, as follows:

1. Teaching
2. Research
3. Citations
4. International outlook
5. Industry income

As with QS, Times Higher Education also weights the indicators for each subject differently, due to the different research cultures and publication rates across academic fields. (THE, 2017).

CONCLUSION

QS and Times Higher Education have kept their indicators and weightings relatively static over the past three years. These indicators are not simply for ranking purposes, but reflect the many factors that are important to developing a world-class university. If universities focus on the following, their quality will improve and the ranking will follow:

• Academic Reputation (by survey) – Universities must find ways to publicize themselves to foreign researchers and develop positive attitudes towards their universities, as well as publicize themselves to well-known editors of prestigious journals.

• Employer Reputation (by survey) – The quality of students must be developed so that future employers are satisfied with a university's graduates as employees.

• Faculty-Student ratio (staff-to-student ratio) – More staff per student tends to correlate with higher quality teaching and learning.

• Doctorate-to-bachelor's ratio – A higher doctorate-to-bachelor's ratio indicates more emphasis on graduate studies and research.

• Faculty with Ph.D. (doctorates-awarded–to–academic-staff ratio) – The more doctorates on the teaching staff, the higher its education level and research ability.

• Papers per Faculty (research productivity) – The more published the faculty, the more innovative and research-oriented the university.

• Citations per Paper – The more citations per paper, the more innovative or groundbreaking the research.

• Citations per Faculty – The more citations per faculty, the more widespread is the innovative research across the university.

• H-index – This measures both the productivity and impact of published research; the higher the H-index, the higher the quality of the research output.

• International Faculty (international-to-domestic-staff ratio) – A university's ability to attract international faculty reflects quality and more global or world-class offerings.

• International Students (international-to-domestic-student ratio)

– Likewise, the more international the student body, the more diverse its perspectives and the more global the university.

• Inbound Exchange – This indicates an institution's success in attracting students from overseas, important for diversity, broader perspectives, and quality.

• Outbound Exchange – The more student outbound exchange, the more a university's student body gains global perspective.

• International collaboration – Through international research collaboration, a university's researchers and students gain access to a larger and more global talent pool.

• Industry income - This reflects a university's ability to attract funding from and collaborate with the private sector.

Thai Universities should adopt the World Bank's Guidelines of Establishing World-Class Universities and University Ranking Indicators into their world-class initiative strategies. Chiang Mai University (CMU) launched its World-Class Initiative Strategy in 2013 organized around the five groupings of THE indicators – teaching, research, citations, international outlook, and industry income. However, CMU has yet to define performance indicators for the teaching and industry income categories. To improve research and citations, CMU has launched and/or focused on several special programs, including: Adjunct Professorship Project, contracting retired researchers to publish, post-doctoral fellowships, publishing special issues of the Chiang Mai University Journal of Natural Science, and further developing the university's Centers of Excellence. These programs helped the university to dramatically increase its research output; one measure, publications in Scopus, increased from 1,023 in 2013 to 1,519 in 2016, an increase of nearly 50%. Yet, this has not been enough to move CMU within the top-400 in the world rankings as targeted. CMU needs to focus on other indicators as well, such as faculty-student ratio and industry income.

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APPENDIX – Thai University Rankings

Table 1. QS and Times Higher Education (THE) University Rankings 2016-17 of Thai universities.

Thai universities	QS		THE	
	World 2016-17	Asia 2016	World 2016-17	Asia 2016
Chulalongkorn University (CU)	252	45	601-800	151-160
Mahidol University (MU)	283	61	501-600	90
Chiang Mai University (CMU)	551-600	104	601-800	141-150
Thammasat University (TU)	601-650	101	-	-
Kasetsart University (KU)	700+	129	801+	-
Khon Kaen University (KKU)	700+	165	801+	181-190
King Mongkut's University of Technology Thonburi (KMUTT)	700+	161	601-800	98
Prince of Songkla University (PSU)	700+	-	801+	181-190
King Mongkut's Institute of Technology Ladkrabang (KMITL)	-	-	801+	-
Suranaree University of Technology (SUT)	-	-	801+	161-170

Table 2. QS World University Rankings by subject 2016 of Thai universities.

Subjects	Thailand rank (World rank)				
	1st	2nd	3rd	4th	5th
Art & Humanities					
Archaeology	-	-	-	-	-
Architecture/built environment	AIT	CU	TU	KMUTT	KKU
Art & design	SU	MU	KMUTT	TU	-
English languages & literature	CU	MU	TU	CMU	KKU
History	CU	TU	CMU	MU	KMITL
Linguistics	CU (101-150)	TU (201-250)	TU	TU	SUT
Modern languages	CU (51-100)	TU (201-250)	CMU (201-250)	MU (251-300)	KU
Performing arts	CMU	MU	CU	-	-
Philosophy	CU	TU	KKU	KU	SU
Engineering & Technology					
Computer science & Info systems	CU (201-250)	AIT (351-400)	KMUTT (401-450)	TU	KU
Engineering - chemical	CU (51-100)	KMUTT	KU	TU	PSU
Engineering - electrical & electronic	CU (151-200)	KMITL (251-300)	AIT	KMUTT	CMU
Engineering - civil & structural	AIT (151-200)	CU (151-200)	TU	KMUTT	KU
Engineering - mechanical, aeronautical & manufacturing	CU (151-200)	AIT	TU	CMU	AIT
Engineering - mineral & mining	CU	AIT	KMUTT	MU	KMUTNB

Subjects	Thailand rank (World rank)				
	1st	2nd	3rd	4th	5th
Life Sciences & Medicine					
Agriculture & forestry	KU (47)	CMU (101-150)	PSU (151-200)	KKU	AIT
Biological science	CU (151-200)	MU (151-200)	KU	CMU	KKU
Dentistry	CU	MU	CMU	PSU	KKU
Medicine	MU (101-150)	CU (151-200)	CMU (251-300)	PSU (301-400)	KKU (301-400)
Nursing	MU	CU	CMU	PSU	KKU
Pharmacy & pharmacology	MU (101-150)	CU (101-150)	CMU	PSU	KKU
Psychology	CU	MU	KKU	CMU	PSU
Veterinary science	CU	MU	KU	KKU	CMU
Natural Sciences					
Chemistry	CU (101-150)	MU (301-400)	KU	CMU	KMUTT
Earth & marine sciences	CU	AIT	KU	CMU	MU
Environmental sciences	CU (151-200)	AIT (201-251)	KU (251-300)	KMUTT	MU
Geography	CU (151-200)	CMU	MU	TU	UBU
Materials science	CU (151-200)	KMUTT	CMU	MU	KMITL
Mathematics	CU (301-400)	KMUTT	CMU	MU	NU
Physics & astronomy	CU	MU	CMU	KMITL	KMUTT

Subjects	Thailand rank (World rank)				
	1st	2nd	3rd	4th	5th
Social Sciences & Management					
Accounting & finance	CU (101-150)	TU	MU	CMU	AIT
Anthropology	CU	TU	CMU	MU	KKU
Business & management studies	TU (151-200)	CU (151-200)	AIT	MU	KU
Communication & media studies	CU	MU	TU	KU	WU
Development studies	TU	AIT	CU	NIDA	MU
Economics & econometrics	CU (201-300)	TU	AIT	CMU	MU
Education	KU	CU	TU	CMU	KKU
Law	MU	AIT	CU	TU	CMU
Politics & international studies	CU	TU	MU	CMU	AIT
Social Policy & administration	CU	TU	MU	PSU	AIT
Sociology	MU	CU	TU	KKU	BU
Statistics & operational research	TU	CU	AIT	CMU	MU

Source: http://www.topuniversities.com/subject-rankings/2016

Table 3. Times Higher Education World University Rankings by subject 2016-17 of Thai universities

Subjects	Thailand rank				
	1st	2nd	3rd	4th	5th
Art & Humanities					
Archaeology	-	-	-	-	-
Architecture	KMUTT	CU	CMU	KKU	KU
History, philosophy & theology	CU	KMITL	KKU	-	-
Languages, literature & linguistics	CU	SUT	KMITL	KU	-
Art, performing arts & design	KMUTT	CU	CMU	PSU	KU
Engineering & Technology					
Computer science	MU	KMUTT	CU	SUT	KU
Chemical engineering	KMUTT	CU	SUT	KU	-
Electrical & electronic engineering	KMUTT	CU	SUT	KKU	KU
Civil engineering	KMUTT	CU	SUT	KKU	KU
General engineering	KMUTT	CU	SUT	KKU	KU
Mechanical & aerospace engineering	KMUTT	CU	SUT	KU	-
Life Sciences & Medicine					
Agriculture & forestry	CMU	SUT	KKU	KMITL	KU
Biological science	MU	CU	SUT	KMITL	KU
Medicine & dentistry	CU	CMU	SUT	KMITL	PSU
Psychology	CU	KMITL	KU	-	-
Other health	MU	CU	SUT	KMITL	PSU
Sports science	-	-	-	-	-
Veterinary science	CU	CMU	KKU	PSU	KU

Subjects	Thailand rank				
	1st	2nd	3rd	4th	5th
Natural Sciences					
Chemistry	MU	KMUTT	CU	SUT	KU
Geology, environmental, earth & marine sciences	MU	CU	KKU	-	-
Geography	CU	KMITL	-	-	-
Mathematics & statistics	MU	KMUTT	CU	KMITL	KU
Physics & astronomy	MU	KMUTT	CU	SUT	KU
Social Sciences & Management					
Accounting & finance	MU	CU	SUT	KU	-
Business & management	MU	CU	SUT	KKU	KU
Communication & media studies	MU	KMUTT	CU	CMU	KU
Economics & econometrics	MU	CU	CMU	PSU	KU
Education	KMUTT	CU	CMU	KKU	KU
Law	CU	CMU	PSU	-	-
Politics & international studies	-	-	-	-	-
Sociology	MU	CU	SUT	-	-

Source: www.timeshighereducation.com