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World's Webometrics Ranking of Maritime Universities

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THE WORLD'S WEBOMETRICS RANKING OF MARITIME UNIVERSITIES

In the paper the author proposes to create the official global Webometrics ranking of maritime universities. The original aim of such ranking is to promote leading universities associated in IAMU (International Assiciation of Maritime Universities), international cooperation for maritime education and training, maritime job and web publication. The ranking shouldn't be only focused on research results but also in other indicators which may reflect better the global quality of the maritime scholar and research institutions worldwide.

ŚWIATOWY RANKING WEBOMETRYCZNY UCZELNI MORSKICH

W referacie autor proponuje by stworzyć oficjalny ogólnoświatowy ranking uczelni morskich na podstawie badań webometrycznych. Celem takiego rankingu byłoby promowanie wiodących uczelni morskich stowarzyszonych w IAMU (International Assiciation of Maritime Universities), międzynarodowej współpracy w zakresie edukacji i szkolenia morskiego, pracy na morzu oraz publikacji internetowych. Ranking taki nie powinien być oparty tylko na rezultatach prac badawczych lecz także na innych wskaźnikach, które mogą lepiej odzwierciedlać jakość uczelni morskich na świecie.

1. INTRODUCTION

The university rankings are lists of universities or equivalent institutions in higher education, an order determined by any combination of factors. Rankings can be based on subjectively perceived "quality," on some combination of empirical statistics, or on surveys of educators, scholars, students (cadets, trainees), prospective students or others. Rankings are often consulted by prospective students and their parents in the university, academy and college admissions process. In addition to rankings of institutions, there are also rankings of specific academic programs, faculties, departments, colleges and schools. Rankings are conducted by magazines and newspapers (e.g. *Newsweek*, *Forbes*, *The Economist*, *Times*, *Scientometrics*) and in some instances by academic practitioners and international associations, among others: the *Academic Ranking of World Universities* compiled by the Shanghai Jiao Tong University, *Global University Ranking* compiled by the RatER, a Russian-based non-commercial independent rating agency supported by the academic society of Russia, bibliometric based ranking *HEEACT (Performance Ranking of Scientific*

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Papers for World Universities) produced by the Higher Education Evaluation and Accreditation Council of Taiwan, and *Times Higher Education - QS World University Rankings*.

Web indicators are very useful for ranking purposes as they are based on the global performance and visibility of the universities. As other rankings focused only on a few relevant aspects, especially research results, web indicators based ranking reflects better the whole picture, as many other activities of professors, lecturers, researchers and students are showed by their web presence.

The Web covers not only formal (e-journals, repositories) but also informal scholarly communication. Web publication is cheaper, maintaining the high standards of quality of peer review processes. It could also reach much larger potential audiences, offering access to scientific knowledge to researchers and institutions located in developing countries and also to third parties (economic, industrial, political or cultural stakeholders) in their own community. The ranking shouldn't be only focused on research results but also in other indicators which may reflect better the global quality of the maritime scholar and research institutions worldwide.

The author intends to motivate both institutions and scholars to have a web presence that reflect accurately their activities. If the web performance of an institution is below the expected position according to their academic excellence, university authorities should reconsider their web policy, promoting substantial increases of the volume and quality of their electronic publications. Candidate students should use additional criteria if they are trying to choose university. Webometrics ranking correlates well with quality of education provided and academic prestige, but other non-academic variables need to be taken into account.

The World's Webometrics Ranking of Maritime Universities (WWRMU) should be conceived to present a multi-faceted view of the relative strengths of the world's leading maritime universities, academies, colleges and faculties. The ranking should be compiled based at least in six distinct indicators: academic peer review, employer review, faculty student ratio, citations per faculty, international faculty, and international students. As the specific indicators the IAMU should take into consideration also:

- international cooperation for maritime education and training,
- cooperation between maritime univerities and industry,
- qualified human resource in maritime industry,
- innovative approach to MET (Maritime Education and Training),
- number of published academic books,
- number of students,
- number of simulators and professional laboratories,
- number and quality of training and researcg vessels,
- number of accessible specialities to studying,
- number of well educated and experienced academic staff,
- development of new trends and technologies in MET,
- train-the-trainer related issues,
- quality assurance for MET institutions,
- other matters related to MET.

2. BACKGROUND OF THE PROJECT

2.1. Berlin Principles on Ranking of Higher Education Institutions

Rankings and league tables of higher education institutions (HEIs) and programs are a global phenomenon. They serve many purposes: they respond to demands from consumers for easily interpretable information on the standing of higher education institutions; they stimulate competition among them; they provide some of the rationale for allocation of funds; and they help differentiate among different types of institutions and different programs and disciplines. In addition, when correctly understood and interpreted, they contribute to the definition of "quality" of higher education institutions within a particular country, complementing the rigorous work conducted in the context of quality assessment and review performed by public and independent accrediting agencies. This is why rankings of HEIs have become part of the framework of national accountability and quality assurance processes, and why more nations are likely to see the development of rankings in the future. Given this trend, it is important that those producing rankings and league tables hold themselves accountable for quality in their own data collection, methodology, and dissemination.

In view of the above, the International Ranking Expert Group (IREG) was founded in 2004 by the UNESCO European Centre for Higher Education (UNESCO-CEPES) in Bucharest and the Institute for Higher Education Policy in Washington, DC. It is upon this initiative that IREG's second meeting (Berlin, 18 to 20 May, 2006) has been convened to consider a set of principles of quality and good practice in HEI rankings - *the Berlin Principles on Ranking of Higher Education Institutions* [8].

2.2. Webometrics

The science of webometrics (also cybermetrics) tries to measure the World Wide Web to get knowledge about the number and types of hyperlinks, structure of the World Wide Web and usage patterns. According to Björneborn and Ingwersen [6], the definition of webometrics is "the study of the quantitative aspects of the construction and use of information resources, structures and technologies on the Web drawing on bibliometric and informetric approaches". The term *webometrics* was first coined by Almind and Ingwersen [4]. A second definition of webometrics has also been introduced, "the study of web-based content with primarily quantitative methods for social science research goals using techniques that are not specific to one field of study" by Thelwall in 2009 [15], which emphasises a small subset of relatively applied methods for use in the wider social sciences. The purpose of this alternative definition was to help publicise appropriate methods outside of the information science discipline rather than to replace the original definition within information science. Similar scientific fields are Bibliometrics, Informetrics, Virtual ethnography, Scientometrics, and Web mining.

Since 2004 the Webometrics ranking of world universities is offering information about more than 6,000 universities ranked according to indicators measuring Web presence and impact (link visibility).

One relatively straightforward measure is the "Web Impact Factor" (WIF) introduced by Ingwersen [11]. The WIF measure may be defined as the number of web pages in a web site receiving links from other web sites, divided by the number of web pages published in the site that are accessible to the crawler. However the use of WIF has been disregarded due to the mathematical artifacts derived from power law distributions of these variables. Other

similar indicators using size of the institution instead of number of webpages have been proved more useful.

2.3. Webometrics Ranking of World Universities

The Webometrics ranking formally and explicitly adheres to the *Berlin Principles on Ranking of Higher Education Institutions*. The ultimate aim is the continuous improvement and refinement of the methodologies according to a set of agreed principles of good practices.

The "World Universities' ranking on the Web" is an initiative of the Cybermetrics Lab, a research group of the Centro de Ciencias Humanas y Sociales (CCHS), part of the National Research Council (CSIC), the largest public research body in Spain. Cybermetrics Lab is devoted to the quantitative analysis of the Internet and Web contents specially those related to the processes of generation and scholarly communication of scientific knowledge. This is a new emerging discipline that has been called Cybermetrics or Webometrics.

With these rankings they intend to provide extra motivation to researchers worldwide for publishing more and better scientific content on the Web, making it available to colleagues and people wherever they are located.

The "Webometrics Ranking of World Universities" was officially launched in 2004, and it is updated every 6 months (data collected in January and July and published one month later). The Web indicators used are based and correlated with traditional scientometric and bibliometric indicators and the goal of the project is to convince academic and political communities of the importance of the web publication not only for dissemination of the academic knowledge but for measuring scientific activities, performance and impact too.

Tab.1. Webometrics Ranking of World Universities (2010)

Item	Position in World Ranking	Maritime University
1	2779	Tokyo University of Marine Science & Technology
2	2935	California State University California Maritime Academy
3	3498	Australian Maritime College
4	3586	National Kaohsiung Marine University
5	3864	United States Merchant Marine Academy
6	3867	Shanghai Maritime University
7	4716	**Gdynia Maritime University**
8	4748	Dalian Maritime University
9	4777	Toyama National College of Maritime Technology
10	4921	Arab Academy for Science, Technology & Maritime Transport

3. JUSTIFICATION AND OBJECTIVES OF THE RANKING

The Webometrics University Ranking is a ranking system based on university web presence, visibility and web access. This ranking system measures how strongly a university is present in the web by its own web domain, sub-pages, rich files, scholarly articles etc, that is an indirect way to measure all the university missions (teaching, research, transfer). Central hypothesis is that web presence is a reliable indicator of the global performance and prestige of the universities. Although the Web is universally recognized as the one of the most relevant tools for scholarly communication, it is still very rare these indicators are used for the evaluation of the scientific research and the academic performance of universities

Top universities are publishing millions of pages produced by dozens of departments and services, hundreds of research teams and thousands of scholars. Strong web presence informs of a wide variety of factors that are clearly correlated with the global quality of the institution: widespread availability of computer resources available, global internet literacy, policies promoting democracy and freedom of speech, competition for international visibility or support of open access initiatives, among others.

Web publication is frequently questioned about quality of the contents, not taking into account that besides research results published in prestigious journals, the same authors develop a wide range of activities reflected on the web pages. Teaching material, raw data, drafts, slides, software, bibliographic or links lists are also relevant and inform of the commitment of the professor to their students. The structure, composition and all kind of administrative information provided by the institution itself is valuable and again when is made available through the web speaks of the high academic level of the university.

Granting access to and promoting web publication among the faculty members means other colleagues know about the scientific results produced, more candidate students know about the university, the companies can find suitable partners for industrial projects, and organizations could easily access to experts contact data.

Most of the institutions on the distribution tail of the rankings only publish a few dozens or hundreds of pages, probable not amounting more than several Megabytes of space in the hard disk of the web server. This output is similar to those provided by teenagers at a cost similar to their weekly stipend. Even in most of the developing countries this human and economic effort is affordable. If you consider most of the Web information is currently recovered through search engines it is possible that data of an even obscure institution of a remote corner of the world can be easily accessed. Having a web presence is easy and cheap and the potential audience is in the order of millions.

Webometric indicators are provided to show the commitment of the institutions to Web publication. If the web performance of an institution is below the expected position according to their academic excellence, university authorities should reconsider their web policy, promoting substantial increases in the volume and quality of their electronic publications.

4. PROPOSED METODOLOGY OF WORLD'S WEBOMETRICS RANKING OF MARITIME UNIVERSITIES

4.1. Presentation

Although Webometrics ranking formally and explicitly still adheres to the *Berlin Principles*, the IAMU would make some points to add to these principles:

- A World's Webometrics Ranking of Maritime Universities (WWRMU) should be a ranking of maritime universities from all over the world, covering hundred of them, not only a few tens universities from the developed world, associated in IAMU.
- A ranking backed by a for-profit company exploiting rank-related business should be checked with care.
- Surveys are not a suitable tool for World rankings as there is no even a single individual with a deep (several semesters per institution), multi-institutional (several dozen), multidisciplinary (hard sciences, nautical sciences, social sciences, technologies) experience in a representative sample (different continents) of maritime universities worldwide.

- Unexpected presence of certain universities in top positions is a good indicator of the (lack of) quality of a ranking, independently on how supposedly sound methodologies are used.
- Rankings favoring stability between editions and not publishing explicitly individual changes and reasons for them (correcting errors, adding or deleting entries, changing indicators) are violating the code of good practices.
- Research only (bibliometrics) based ranking are biased against technologies, computer science, social sciences and humanities, disciplines that usually amounts for more than half of the scholars in a standard comprehensive university.
- Rankings should include indicators, even indirect ones, about teaching mission and the so-called third mission, considering not only the scientific impact of the university activities but also the economic, social, cultural and also the political ones.
- World-class maritime universities are not small, very specialized institutions.
- A World's Webometrics Ranking of Maritime Universities should be one ranking: publishing a series of completely different classifications with exactly the same data is useless and confusing.
- Link analysis is a far more powerful tool for quality evaluation than citation analysis that only counts formal recognition between peers, while links not only includes bibliographic citations but third parties involvement with university activities.

4.2. Purposes and Goals of Ranking

There are the following purposes and goals of ranking:

1. *Assessment of higher education (processes, and outputs) in the Web.* The Web indicators are already publishing comparative analysis with similar initiatives. But the current objective of the Webometrics ranking is to promote Web publication by maritime universities, evaluating the commitment to the electronic distribution of these organizations and to fight a very concerning academic digital divide which is evident even among world universities from developed countries. However, even when we do not intend to assess universities performance solely on the basis of their web output, Webometrics ranking is measuring a wider range of activities than the current generation of bibliometric indicators that focuses only in the activities of scientific elite
2. *Ranking purpose and target groups.* Webometrics ranking is measuring the volume, visibility and impact of the web pages published by universities, with special emphasis in the scientific output (referred papers, conference contributions, key-note speeches, reprints of the articles published in professional magazines, pre-prints, monographs, thesis, reports, …) but also taking into account other materials (courseware, seminars or workshops documentation, digital libraries, databases, multimedia, personal pages, …) and the general information on the institution, their departments, research groups or supporting services and people working or attending courses.

   There is a direct target group for the ranking which should be the maritime university authorities. If the web performance of an institution is below the expected position according to their academic excellence, they should reconsider their web policy, promoting substantial increases in the volume and quality of their electronic publications.

   Faculty members are indirect target groups as the IAMU should expect that in a near future the web information could be as important as other bibliometric and

scientometric indicators for the evaluation of the scientific performance of scholars and their research groups.

Finally, candidate students should not used this data as the sole guide for choosing university, although a top position means that the institution has a policy that encourages new technologies and it has resources for their adoption.

3. *Diversity of institutions: missions and goals of the institutions*. Quality measures for maritime research-oriented institutions, for example, are quite different from those that are appropriate for institutions that provide broad access to underserved communities. Institutions that are being ranked and the experts that inform the ranking process should be consulted often.
4. *Information sources and interpretation of the data provided*. Access to the Web information is done mainly through search engines. These intermediaries are free, universal, and very powerful even when considering their shortcomings (coverage limitations and biases, lack of transparency, commercial secrets and strategies, irregular behaviour). Search engines should be key for measuring visibility and impact of university's websites.

   There are a limited number of sources that can be useful for webometric purposes: 7 general search engines (Google*, Yahoo Search*, Live (MSN) Search*, Exalead*, Ask (Teoma), Gigablast and Alexa) and 2 specialised scientific databases (Google Scholar* and Live Academic). All of them have very large (huge) independent databases, but due to the availability of their data collection procedures (Apis), only those marked with asterisk are used in compiling the Webometrics ranking.
5. *Linguistic, cultural, economic, and historical contexts.* The project intends to have true global coverage, not narrowing the analysis to a few tens of institutions (world-class maritime universities) but including as many organizations as possible. The only requirement in the IAMU international ranking should have an autonomous web presence with an independent web domain. This approach allows a larger number of institutions to monitor their current ranking and the evolution of this position after adopting specific policies and initiatives. Universities in developing countries have the opportunity to know precisely the indicators' threshold that marks the limit of the elite.

   Current identified biases of the Webometrics rankings include the traditional linguistic one (more than half of the internet users are English-speaking people), and a new disciplinary one. Since in most cases the infrastructure (web space) and the connectivity to the Internet already exits, the economic factor is not considered a major limitation.

5. DESIGN AND WEIGHTING OF INDICATORS

5.1. Methodology Used to Create the Ranking

The unit for analysis should be the institutional domain, so only maritime universities and research centres with an independent web domain should be considered. If an institution has more than one main domain, two or more entries should be used with the different addresses. About 5-10% of the institutions have no independent web presence, most of them located in developing countries. The IAMU catalogue of maritime institutions should include not only universities but also other higher education institutions following the recommendations of IAMU, IMO, UNESCO, etc. Names and addresses were collected from both national and international sources including among others (Tab. 2).

Tab. 2. Sources of highter education institutions

International Association of Maritime Universities (IAMU)	http://www.iamu-edu.org/
All Universities around the World	http://www.bulter.nl/universities/
Maritime Schools	http://users.hal-pc.org/~nugent/school.html
Universities Worldwide	http://www.univ.cc/world.php

Maritime university activity is multi-dimensional and this is reflected in its web presence. So the best way to build the ranking is combining a group of indicators that measures these different aspects. Almind & Ingwersen [4] proposed the first Web indicator, Web Impact Factor (WIF), based on link analysis that combines the number of external inlinks and the number of pages of the website, a ratio of 1:1 between visibility and size. This ratio should be used for the ranking but adding two new indicators to the size component: number of documents, measured from the number of rich files in a web domain, and number of publications being collected by Google Scholar database. As it has been already commented, the four indicators were obtained from the quantitative results provided by the main search engines as follows:

Size (S). Number of webpages recovered from four engines: Google, Yahoo, Live Search and Exalead. For each engine, results should be log-normalised to 1 for the highest value. Then for each domain, maximum and minimum results should be excluded and every institution should be assigned a rank according to the combined sum.

Visibility (V). The total number of unique external links received (inlinks) by a site can be only confidently obtained from Yahoo Search. Results should be log-normalised to 1 for the highest value and then combined to generate the rank.

Rich Files (R) – the total number of documents. After evaluation of their relevance to academic and publication activities and considering the volume of the different file formats, the following were selected: Adobe Acrobat (*.pdf*), Adobe PostScript (*.ps*), Microsoft Word (*.doc*) and Microsoft Powerpoint (*.ppt*). These data were extracted using Google and merging the results for each filetype after log-normalising in the same way as described before.

Scholar (Sc). Google Scholar provides the number of papers and citations for each academic domain. These results from the Scholar database represent papers, reports and other academic items.

Tab. 3. The four Webometrics ranks

WEBOMETRICS RANKS		
VISIBILITY (external inlinks) 50%	SIZE (Web pages)	20%
	RICH FILES	15%
	SCHOLAR	15%

G-Factor. A ranking of university and college web presence, the G-Factor methodology counts the number of links only from other university websites relying solely on Google's search engine. The G-Factor is an indicator of the popularity or importance of each

university's website from the combined perspectives of the creators of many other university websites. It is therefore claims to be a kind of extensive and objective peer review of a university through its website –the G-Factor measures the centrality of each university's website in the network of university websites.

5.2. *Relevance and Validity of the Indicators*

The choice of the indicators should be done according to several criteria, some of them trying to catch quality and academic and institutional strengths but others intending to promote web publication and Open Access initiatives. The inclusion of the total number of pages should be based on the recognition of a new global market for academic information, so the web should be the adequate platform for the internationalization of the institutions. A strong and detailed web presence providing exact descriptions of the structure and activities of the university can attract new students and scholars worldwide. The number of external inlinks received by a domain should be a measure that represents visibility and impact of the published material, and although there is a great diversity of motivations for linking, a significant fraction works in a similar way as bibliographic citation. The success of self-archiving and other repositories related initiatives can be roughly represented from rich file and Scholar data. The huge numbers involved with the pdf and doc formats means that not only administrative reports and bureaucratic forms should be involved. PostScript and Powerpoint files are clearly related to academic activities.

5.3. Measure Outcomes in Preference to Inputs Whenever Possible

Data on inputs should be relevant as they reflect the general condition of a given establishment and should be more frequently available. Measures of outcomes provide a more accurate assessment of the standing and/or quality of a given institution or program.

The current rules for existing ranking indicators including the described weighting model has been tested and published in scientific papers [4],[11],[12],[16]. More research should be still done on this topic, but the final aim is to develop a model that includes additional quantitative data, especially bibliometric and scientometric indicators.

6. IAMU RANKING

6.1. International Maritime Universities Ranking Expert Group (IMUREG)

In view of the above, it is strongly recommended that the International Maritime Universities Ranking Expert Group (IMUREG) should be founded as soon as possible. It is expected that on the base of this initiative the IMUREG's second meeting should be convened to consider a set of principles of quality and good practice in IAMU ranking – to be called *the IAMU Principles on Ranking of Maritime Institutions***.**

It is expected that this initiative will set a framework for the elaboration and dissemination of maritime institutions rankings - whether they are national, regional, or global in scope - that ultimately will lead to a system of continuous improvement and refinement of the methodologies used to conduct these rankings. Given the heterogeneity of methodologies of rankings, these principles for good ranking practice will be useful for the improvement and evaluation of ranking.

6.2. Decription of World's Webometrics Ranking of Maritime Universities

The IAMU rankings and league tables should:

A) Purposes and Goals of Rankings

1. *Be one of a number of diverse approaches to the assessment of higher education inputs, processes, and outputs.* Rankings can provide comparative information and improved understanding of higher education, but should not be the main method for assessing what higher education is and does. Rankings provide a market-based perspective that can complement the work of government, accrediting authorities, and independent review agencies.
2. *Be clear about their purpose and their target groups.* Rankings have to be designed with due regard to their purpose. Indicators designed to meet a particular objective or to inform one target group may not be adequate for different purposes or target groups.
3. *Recognize the diversity of institutions and take the different missions and goals of institutions into account*. Quality measures for research-oriented institutions, for example, are quite different from those that are appropriate for institutions that provide broad access to underserved communities. Institutions that are being ranked and the experts that inform the ranking process should be consulted often.
4. *Provide clarity about the range of information sources for rankings and the messages each source generates*. The relevance of ranking results depends on the audiences receiving the information and the sources of that information (such as databases, students, professors, employers). Good practice would be to combine the different perspectives provided by those sources in order to get a more complete view of each higher education institution included in the ranking.
5. *Specify the linguistic, cultural, economic, and historical contexts of the educational systems being ranked*. International rankings in particular should be aware of possible biases and be precise about their objective. Not all nations or systems share the same values and beliefs about what constitutes "quality" in tertiary institutions, and ranking systems should not be devised to force such comparisons.

B) Design and Weighting of Indicators

6. *Be transparent regarding the methodology used for creating the rankings*. The choice of methods used to prepare rankings should be clear and unambiguous. This transparency should include the calculation of indicators as well as the origin of data.
7. *Choose indicators according to their relevance and validity.* The choice of data should be grounded in recognition of the ability of each measure to represent quality and academic and institutional strengths, and not availability of data. Be clear about why measures were included and what they are meant to represent.
8. *Measure outcomes in preference to inputs whenever possible*. Data on inputs are relevant as they reflect the general condition of a given establishment and are more frequently available. Measures of outcomes provide a more accurate assessment of the standing and/or quality of a given institution or program, and compilers of rankings should ensure that an appropriate balance is achieved.
9. *Make the weights assigned to different indicators (if used) prominent and limit changes to them*. Changes in weights make it difficult for consumers to discern whether an institution's or program's status changed in the rankings due to an inherent difference or due to a methodological change.

C) Collection and Processing of Data

10. *Pay due attention to ethical standards and the good practice recommendations articulated in these Principles.* In order to assure the credibility of each ranking, those responsible for collecting and using data and undertaking on-site visits should be as objective and impartial as possible.
11. *Use audited and verifiable data whenever possible.* Such data have several advantages, including the fact that they have been accepted by institutions and that they are comparable and compatible across institutions.
12. *Include data that are collected with proper procedures for scientific data collection*. Data collected from an unrepresentative or skewed subset of students, faculty, or other parties may not accurately represent an institution or program and should be excluded.
13. *Apply measures of quality assurance to ranking processes themselves*. These processes should take note of the expertise that is being applied to evaluate institutions and use this knowledge to evaluate the ranking itself. Rankings should be learning systems continuously utilizing this expertise to develop methodology.
14. *Apply organizational measures that enhance the credibility of rankings.* These measures could include advisory or even supervisory bodies, preferably with some international participation.

D) Presentation of Ranking Results

15. *Provide consumers with a clear understanding of all of the factors used to develop a ranking, and offer them a choice in how rankings are displayed*. This way, the users of rankings would have a better understanding of the indicators that are used to rank institutions or programs. In addition, they should have some opportunity to make their own decisions about how these indicators should be weighted.
16. *Be compiled in a way that eliminates or reduces errors in original data, and be organized and published in a way that errors and faults can be corrected.* Institutions and the public should be informed about errors that have occurred.

7. CONCLUSIONS

In the paper the author tried to present the urgent need of creating the World's Webometrics Ranking of the Maritime Universities. It is strongly recommended that the International Maritime Universities Ranking Expert Group (IMUREG) should be founded as soon as possible. The methodology should use the pool of maritime universities from what it will be determined by IMUREG and should utilize a pool of "experts" formed by project officials and managers to determine the rating scales for every indicator of performance of the maritime universities in main areas including academic performance, research performance, faculty expertise, resource availability, socially significant activities of graduates, number of students, scientific potential and number of well educated and experienced academic staff, quality and number of simulators and professional laboratories, international activities of the university, and international opinion of foreign universities. The ranking shouldn't be only focused on research results but also in other indicators which may reflect better the global quality of the maritime scholar and research institutions worldwide. The official global Webometrics ranking of maritime universities should be establish on the base of Webometrics Ranking of World Universities.

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