Erasmus Mundus Programme

Project UNIQUE

University Quality Exchange

Key Performance Indicators

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KEY PERFORMANCE INDICATORS

I.   Introduction

This paper is part of **work package 2 "Common Tools, Methods and Procedures needed for Co-operation with European Universities".** Specifically, it deals with **key performance indicators and rankings** which make it easier to compare universities with different systems. This way students are able to better compare European universities with their own system and are therefore able to better choose universities which meet their requirements. It is important that this information is easily interpretable and that everybody can easily differentiate among different types of institutions and different programmes and disciplines.

The paper starts with a general **definition of key performance indicators**. It then provides a brief analysis of the **importance attached to rankings** based on inputs from PCUs of the UNIQUE project. This is followed by an overview of **available rankings worldwide**. As the recently launched ranking **U-Multirank,** developed by the European Commission, is considered of particular relevance for this project, a separate section is dedicated to this ranking and how it can help to inform students' choices on where to study in Europe. A sections with **conclusions on rankings** and a **list of useful sources** are followed by two annexes: Annex 1 provides concrete **guidelines for students** with key questions that can assist them in the decision making process as well as in producing personalized rankings within U-Multirank. Annex 2 provides **the full list of indicators as used within U-Multirank**.

II.   Definition

A major consideration in performance improvement and change management involves the selection and use of **performance measures or indicators**. The measures or indicators selected should best represent the factors that lead to improved student, operational, and financial performance. A comprehensive set of measures or indicators tied to student, stakeholder, and/or organizational performance requirements represents a clear basis for aligning all processes with organization's goals.[1] Performance indicators of Higher Educations Institutions (HEIs) can also provide an important source for students to inform their choices on where to study.

> Indicators are signposts of change along the path to development. They describe the way to track intended results and are critical for monitoring and evaluation. […] In particular, indicators can help to:
> - Inform decision making for ongoing programme or project management.
> - Measure progress and achievements, as understood by the different stakeholders.
> - Clarify consistency between activities, outputs, outcomes and impacts.
> - Ensure legitimacy and accountability to all stakeholders by demonstrating progress.
> - Assess project and staff performance.
>
> Indicators may be used at any point along the results chain of activities, outputs, outcomes and impacts, but must always directly relate to the result being measured.
>
> SOURCE: *United Nations Development Programme*, Handbook on Planning, Monitoring and Evaluating for Development Results, New York (2009).

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[1] *Kadarsah Suryadi*, Key Performance Indicators Measurement Model Based on Analytic Hierarchy Process and Trend-Comparative Dimension in Higher Education Institution, Chile (2007).

III.   Relevant Indicators for an Exchange Period

Rankings can be an important source of information for students in selecting an exchange university. Generally, rankings are considered **more relevant for outgoing students than for incomings**. PCUs agreed though that there are many more – and also more powerful - factors that influence students' choices on where to study. In the UNIQUE Focus Group Summary it was estimated that **approximately 30-40 % of students are interested in rankings**. Other factors that the participating PCUs considered as particularly relevant for students are outlined below. These factors identified by PCUs were also taken into account for the formulation of the guidelines for students in Annex 1.

Relevant indicators for students (other than rankings):

- Partner agreements between universities,
- Location,
- Culture,
- Expenses, possibilities for scholarships,
- Courses offered at partner institution,
- Credits that can be gained,
- Accreditation of courses at home,
- Contribution to the field of study,
- Expertise of the partner institute and quality of lecturers,
- Exchange term duration,
- Feedback given by senior students,
- Branding of the receiving institution,
- Involvement in the industry,
- Social and academic infrastructure.

IV.   Overview on Available Rankings Worldwide

In order to compare universities worldwide, there exists a **large number of rankings that each works with a different set of performance indicators**. The challenge is to decide on performance indicators which are suitable for different kinds of end users: students, parents, teaching staff, researchers, businesses, policy makers, and higher education institutions themselves.

The existing rankings – with the exception of U-Multirank - put an emphasis on the following indicators:

- **They focus on research** aspects rather than teaching, prompting universities to put more efforts in research, while wasting potential in other areas.
- **They rank entire institutions** rather than programmes and departments. This means that they do not show the diversity in university profiles.
- Due to criteria that favour American and British universities, only a **small proportion of European universities is included in these rankings.**

Below the main global rankings available are presented together with key performance indicators which are central for each of the rankings. U-Multirank is described in a separate section (Section V), as it is considered of particular relevance to the project and thus will be elaborated in more detail.

a.)   Times Higher Education World University Rankings
http://www.timeshighereducation.co.uk/world-university-rankings/

The Times Higher Education World University Rankings (or THE World University Rankings) are published annually by the British magazine Times Higher Education (THE) with data supplied by Thomson Reuters that provides citation database information. The top 400 global research-led universities are presented in a league table. The ranking employs **13 performance indicators** which are **grouped into five categories: teaching, research, citations, industry income, and international outlook**. An emphasis is put on research and citations which together make up 62,5% of the final score. This has been criticized for undermining universities that do not use English as their primary language since citations and publications in a language different from English are harder to come across. Another disadvantage for universities of non Anglo-Saxon tradition is that within the disciplines of social sciences and humanities the main tool for publications are books which are not or only rarely covered by citations records. Also, there is less emphasis put on indicators related to teaching and international orientation.

b.)   Academic Ranking of World Universities, Shanghai Ranking
http://www.shanghairanking.com/

The Academic Ranking of World Universities (ARWU), also known as the Shanghai Ranking, is compiled by the Shanghai Jiao Tong University on an annual basis. The ranking compares about 1,200 higher education institutions worldwide and the best 500 universities are published in a league table. ARWU uses **six indicators** to rank universities: **alumni winning Nobel Prizes and Fields Medals** (10 percent)**, staff winning Nobel Prizes and Fields Medals** (20 percent)**, highly cited researchers in 21 broad subject categories** (20 percent)**, articles published in the journals Nature and Science** (20 percent)**, the Science Citation Index and Social Sciences Citation Index** (20 percent) **and the per capita academic performance (on the indicators above) of an institution** (10 percent)**.** This ranking has been criticised for its heavier focus on the natural sciences over the social sciences or humanities, and on research over the quality of instruction opposed to teaching and international orientation.

c.)   QS World University Rankings
http://www.topuniversities.com/

The QS World University Rankings are annual university rankings published by British Quacquarelli Symonds (QS). The ranking currently considers over 2,000 and evaluates over 700 universities worldwide, ranking the top 400. **Six indicators** are drawn together to form an international ranking of universities: **academic reputation** (40 percent)**, employer reputation** (10 percent)**, citations per faculty member** (20 percent)**, faculty student ratio** (20 percent)**, international students** (5 percent)**, and international faculty** (5 percent). The world's top universities can be sorted by region and subject, and users can create their own personalized rankings based on what matters most to them. The QS rankings have been criticised for placing too **much emphasis on peer review, which receives 40 percent of the overall score**. Some people have also expressed concern about the manner in which the peer review has been carried out.

d.) Webometrics Ranking of World Universities
http://www.webometrics.info/

The Webometrics Ranking of World Universities is published by the Cybermetrics Lab (Spanish National Research Council, CSIC) twice a year and covers more than 20,000 higher education institutions worldwide. The purpose of the ranking is to promote global access to academic knowledge produced by universities. The ranking is based on a **composite indicator** that takes into account **information about the performance of universities based on their impact** (number of links to the university's website), **web presence** (number of web pages published by the university), **openness** (number of academic publications on the internet) and **excellence** (number of academic publications on the internet that are cited often). The ranking does not take into account any dimension other than publications – such as teaching or international orientation. This ranking may therefore not provide enough information relevant for students/academics to inform their choice on where to study/teach.

Key rankings worldwide on a glance:

U-Multirank (see below)
http://u-multirank.eu

Times Higher Education World University Rankings
http://www.timeshighereducation.co.uk/world-university-rankings/

Academic Ranking of World Universities, Shanghai Ranking
http://www.shanghairanking.com/

QS World University Rankings
http://www.topuniversities.com/

Webometrics Ranking of World Universities
http://www.webometrics.info/

V.   U-Multirank and its Performance Indicators

U-Multirank (http://u-multirank.eu) is a **new system of university ranking** which was announced in 2011, backed by the European Union, and which was **launched in May 2014**. U-Multirank stands for "multi-dimensional ranking of higher education institutions" and aims to foster greater transparency of higher education globally.

At the launch press conference Androulla Vassiliou, European Commissioner for Education, Culture, Multilingualism and Youth said: "*I welcome the launch of this exciting new development in higher education. U-Multirank will enable students to make more informed decisions about where to study and give us a more accurate picture of how universities perform. We are proud of our world-class higher education, but we need many kinds of universities, catering for a wide range of needs; that means strong technical and regional universities just as much as outstanding research universities. U-Multirank highlights many excellent performers that do not show up in current, research-focused, global rankings – including more than 300 universities that have never appeared in any world ranking until now.*"

U-Multirank comprises more than 850 higher education institutions of various types from 70 countries worldwide with a focus on European institutions. 5,000 study programmes and 60,000 students were surveyed and over **30 indicators** are used to compare the different universities and programmes. The

data is drawn from a number of sources: information supplied by higher education institutions themselves; data from bibliometric and patent data bases, as well as data from student surveys.

U-Multirank is not a typical ranking since it takes a user-driven, multi-dimensional approach comparing university performance across a range of different activities grading them from "A" (very good) to "E" (weak), rather than producing a global top 100 universities based on composite scores. It allows users to decide themselves which indicators are important for them and to produce their own **personalised rankings**. Moreover, U-Multirank also includes three "readymade" rankings – on research, on the strengths of universities' economic involvement and on Business Studies programmes.

As any other ranking, U-Multirank also faces some challenges and criticism which it will have to respond to in the next ranking rounds. There is a low participation level of higher education institutions outside of Europe which means that U-Multirank still has to convince overseas institutions to see the merits of the system. Participation also requires significant investment of time on the part of institutions since the ranking heavily relies on self-reported data by the universities. To assure the quality of this data, U-Multirank is aware of the need for thorough verification procedures and has developed a number of statistical procedures and cross-checks.

The wide range of new indicators of performance **(overall 31 indicators) cover five broad dimensions**. Below you can find the five dimensions used for U-Multirank as well as selected indicators that are particularly relevant for informing students' and academics' choices on where to study/teach (the full list can be found in the appendix):

1. **Teaching and Learning**

- Student-staff-ratio (number of students per member of academic staff)
- BA graduation rate (percentage of new entrants that successfully completed their bachelor programme)
- MA graduation rate (percentage of new entrants that successfully completed their master programme)
- Overall learning experiences (assessment of the quality of the overall learning experience)
- Quality of courses & teaching (assessment of the quality of teaching provision)
- Contact with teachers (assessment of the feedback given by teachers)
- Facilities such as libraries, laboratories, IT provision (assessment of the quality of library services, of laboratories and of IT services for students)

2. **Research**

- Citation rate (average number of times that the university department's research publications, over the period 2008-2011, get cited in other research, adjusted at the global level for the field of science and the year in which a publication appeared)
- Publication output (number of research publications, indexed in the Web of Science database, where at least one author is affiliated to the university)
- Top cited publications (proportion of the department's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited)
- Research orientation of teaching (degree to which the education is informed by research in the field)

3. Knowledge Transfer

- Industry joint publications (percentage of the department's research publications that list an author address referring to a business enterprise or a private sector R&D unit)
- Patents awarded (number of patents assigned to inventors working at the university over the period 2001-2010)
- Spin-offs (number of spin-offs, i.e. firms established on the basis of a formal knowledge transfer arrangement between the institution and the firm, recently created by the institution, per 1000 full-time academic staff)

4. International Orientation

- Foreign language BA programmes (percentage of bachelor programmes that are offered in a foreign Language)
- Foreign language MA programmes (percentage of master programmes that are offered in a foreign language)
- BA programmes international orientation (composite measure taking into account the existence of joint/dual degree programmes; the inclusion of study periods abroad; the percentage of international degree and exchange students; and the percentage of international academic staff)
- MA programmes international orientation (composite measure taking into account the existence of joint/dual degree programmes; the inclusion of study periods abroad; the percentage of international degree and exchange students; and the percentage of international academic staff)
- Opportunities to study abroad (assessment of the opportunities for studying abroad)
- International academic staff (percentage of academic staff with foreign citizenship)

5. Regional Engagement

- BA graduates working in the region (percentage of bachelor graduates who found their first job after graduation in the region where the university is located)
- MA graduates working in the region (percentage of master graduates who found their first job after graduation in the region where the university is located)
- Student internships in the region (out of the students who did an internship, the percentage where the internship was with a company or organisation located in the region)

The five performance dimensions on a glance:

1. Teaching and Learning
2. Research
3. Knowledge Transfer
4. International Orientation
5. Regional Engagement

U-Multirank is also the first international comparison **to include all types of higher education institutions**. It does not only focus on comprehensive internationally-oriented research universities but the full range: including specialist colleges, regionally-orientated institutions and Universities of Applied Sciences. U-Multirank not only shows the performances of the institutions as a whole but also ranks them in selected academic fields: in 2014 the fields are business studies, electrical engineering,

mechanical engineering and physics; in 2015 psychology, computer science and medicine will be added.

VI.   Conclusion

The potential of European higher education institutions to fulfil their role in society and to contribute to economic and social development is underexploited. More transparency is needed so that different stakeholders can deepen their understanding of how higher education institutions are performing. This will also allow students and academics to make better informed choices which institutions fit their profiles in terms of studying and teaching.

U-Multirank is a key tool for this: it is more comprehensive and user-driven than any existing ranking, showing more clearly the performances of a much wider range of universities and their potential to contribute to growth and jobs. Moreover, it compares institutions with similar activity profiles. It does not make much sense to compare a small regional undergraduate teaching institution with an internationally-oriented research university, nor to compare an Arts Academy with a technical university. U-Multirank invites the user to first choose a number of empirical "profile indicators" and then compare institutions with similar profiles.

It is important that there exists a wide diversity of higher education institutions which do well in different areas, to meet the needs of different students and different labour market and research needs. The available information on the performance of higher education institutions focuses mainly on research-intensive universities, and thus covers only a very small proportion of higher education institutions. It is essential though to draw on a wider range of analysis and information covering all aspects of performance to help students make informed study choices, to enable institutions to identify and develop their strengths, and to support policy-makers in their strategic choices on the reform of higher education systems. U-Multirank, a multi-dimensional ranking and information tool, addresses these information needs and has been shown to be both feasible and widely supported by education stakeholders.

Finally, each ranking has got its entitlement and users have to decide themselves which ranking and which performance indicators are the most suitable for them. For students university rankings alone will not solve the complex question of where and what to study but they are playing a role in the decision-making process of a growing number of prospective students. There exist numerous university rankings, and the factors they measure vary widely – from academic reputation to research citations to student satisfaction to web presence to the number of CEOs who have graduated from a given institution. University rankings are just one of a number of resources (university fairs, recruitment offices, university websites and faculty pages, contacting alumni and faculty, etc.) that will help users get a better sense of their options. Rankings can play a useful role, offering comparative data that would otherwise not be available.

VII.   List of Useful Sources

Sources from the UNIQUE Project:

UNIQUE Focus Group Summary

Other sources:

Kadarsah Suryadi, Key Performance Indicators Measurement Model Based on Analytic Hierarchy Process and Trend-Comparative Dimension in Higher Education Institution, Chile (2007).

United Nations Development Programme, Handbook on Planning, Monitoring and Evaluating for Development Results, New York (2009).

U-Multirank
http://u-multirank.eu

Times Higher Education World University Rankings
http://www.timeshighereducation.co.uk/world-university-rankings/

Academic Ranking of World Universities, Shanghai Ranking
http://www.shanghairanking.com/

QS World University Rankings
http://www.topuniversities.com/

Webometrics Ranking of World Universities
http://www.webometrics.info/

ANNEX 1: Guidelines for Students: "How to Choose the Right University?"

Going on a study period abroad gives you the ability to become independent and the first independent step for you is to do your own research on your destination. The potential of an experience abroad will be maximised when your expectations are well managed based on research. To allow for the best experience possible, you should research your partner university's websites for instructions, as well as review your home university's exchange websites and attend all briefings offered by your international relations office at home.

Every university is different and each student has different priorities. Finding the right university for a study period abroad can be a challenging task considering the large number of higher education institutions and the wide range of courses available. It is therefore essential that you decide what is most important to you which requires a thorough research.

a.) Location of the university

Where do you want to go? **Country guides** can help you to get a quick overview of what it is like to live and study in a particular place, and also provide a starting point for the more specific university search.

b.) Local language and culture

A foreign culture will naturally seem alien to those who do not understand its language. Learning the language or at least a few local phrases will offer the unique opportunity to experience and adapt to communication and culture in a foreign setting. If you are not fluent in the local language, make sure that the courses offered at your chosen host university are in English.

c.) Type and size of the university

At what kind of university would you like to study? **Comprehensive or specialised** university, **large or small university**, **old or new university**, **research-driven or locally orientated** university, **university or university of applied sciences**, **campus** in the city center or in the suburbs or university buildings scattered all around the city.

Look at the university websites to get a better overview of the specific university and its environment. Many universities have profiles which include for example a brief history of each institution or give an indication of student numbers.

d.) Types of courses and accreditation at home university

Once you have decided where to go, have a close look at the **academic calendar** of the host university, on the **courses that are offered for exchange students**, on the **language of instruction**, on the **number of ECTS** and contact hours in order to make sure that you meet the requirements of accreditation at the home university.

When choosing your courses, the best resource is the **partner university's website**. Most universities have **student handbooks** for all the details you need to know about courses, options, teaching methods and assessment. Moreover, the **course catalogues**, or even a **special list of courses available only for incoming exchange students** are online. Use these lists to identify courses suitable to fulfill your home university's course requirements, paying special attention to **any restrictions noted by the partner university**.

The majority of European universities use **ECTS**, the European Credit Transfer System, which reflects the total workload required to achieve the objectives of a programme (1 ECTS = 25-30hrs of learning). This includes the time spent in attending lectures, seminars, independent study, examinations, etc. The course descriptions also include **learning outcomes** which are sets of competences, expressing what the student will know, understand or be able to do after course completion. It is therefore extremely important to discuss your chosen courses with your home university to ensure you take adequate courses.

e.) Quality and reputation

Consult **rankings** to get an overview about which universities have got a good reputation. There are many different rankings available which mostly put a strong emphasis on research. U-Multirank (http://u-multirank.eu) allows users to decide themselves which indicators are important for them and to produce their own personalised rankings.

f.) First-hand experiences

Consult senior students at your university who already spent a period of study abroad. The opinion and **reviews of students** who participated in the past in exchange programmes offered by the home university are extremely valuable. They can give you a good picture of what studying and living in a foreign country can be like.

g.) Facilities

The facilities offered by universities are fairly similar to one another. Most of them will have a library, labs (depending on the study programme), a sports centre, a health service, a careers service and so on. If there is something that is particularly important for you it is worth checking it out before you apply for the programme. If you have any special needs, do take the time to ensure that your needs will be catered for by the university you would like to go to.

h.) Cost

Cost is always a factor in the decision-making process. Ask at your home university if there are any **bursary/scholarship schemes** available. In order to find out how much it will cost to study at a particular university abroad, you will have to check if there are any fees at the host university, how much accommodation will cost and how much life will cost in general in that specific country/city.

ANNEX 2:   List of Indicators of U-Multirank