

# Chapter 5

## Impact of Rankings

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### 5.1 Introduction

Rankings not only provide information on the performance of higher education and research institutions, either rightly or wrongly, but they also have major impacts on decision-making in higher education and research institutions and on the sector more broadly. According to many commentators, their effect on the sector is rather negative: encouraging wasteful use of resources, promoting a narrow concept of quality, and inspiring institutions to engage in ‘gaming the rankings’. As will be shown near the end of this chapter, a well-designed ranking can have a positive effect on the sector, encouraging higher education and research institutions to improve their performance. While specific effects depend on the details of each ranking exercise, some common tendencies of current rankings nevertheless can be highlighted.

### 5.2 Impact on Student Demand

Many rankings intend to affect student demand and there is clear evidence that they indeed have an impact on student choices. It has been shown in the US that when an institution improves its position in the rankings, the next year it receives more applicants, sees a greater proportion of its accepted applicants enroll, and

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subsequently sees that the students in the incoming class have higher entrance scores (Monks & Ehrenberg, 1999). The experience of the CHE Ranking in Germany confirms this result. In some fields, e.g. psychology and medicine, the number of applications at the recommended universities increased significantly after publication of ranking results: in psychology the number of applications rose on average 19% in universities recommended as excellent in research and 15% in universities recommended as efficient and supportive in teaching (Federkeil, 2002).

Furthermore, it has been shown both in the US and Europe that rankings are not equally used by all types of students (Hazelkorn, 2011): less by domestic undergraduate entrants, more at the graduate and postgraduate levels. Especially at the undergraduate level, rankings appear to be used particularly by students of high achievement and by those coming from highly educated families (Cremonini, Westerheijden, & Enders, 2008; Heine & Willich, 2006; McDonough, Antonio, & Perez, 1998).

### 5.3 Impact on Institutional Management

Rankings strongly impact on the internal management in higher education institutions. The majority of higher education leaders—63%, according to Hazelkorn's survey (Hazelkorn, 2007)—report that they use potential improvement in rank to justify claims on resources, which is confirmed by a survey of strategic plans and annual reports (Espeland & Sauder, 2007). Moreover, lacking other benchmarks, some administrators use rankings as a heuristic to help allocate resources internally, particularly by rewarding current winners (an example of the 'Matthew effect'; see Sect. 5.7), e.g. by investing in laboratories that have had major research impact scores. In general, they tend to focus on targeting the indicators in league tables that are most easily influenced, e.g. the institution's branding, institutional data and choice of publication language (English) and channels (counted in the international databases such as Thomson Reuters or Scopus), in extreme cases leading to what Hazelkorn called 'Fetishization of particular forms of knowledge, contributors and outputs' and stimulating a return to Mode-1 research at the cost of Mode-2 research. At the same time, Mode-2 research is regarded as highly relevant for stimulating higher education and research institutions' role in the knowledge economy. From that perspective, turning towards Mode-1 research can be regarded as a perverse effect.

The changes in an institution's ranking position can have a major effect on the leadership of an institution. There are various examples of cases in which leaders' salary bonuses were directly linked to their institution's position in the ranking (Jaschik, 2007), or in which administrators had to step down because of a negative ranking outcome, even though the drop in the ranking may have been caused by erroneous data (see Siang, 2005; The Star, 2006).

## 5.4 Impact on Public Funding

Higher education and research rankings not only attract the attention of students, but they also are notably followed by national policy-makers and the public in general, more perhaps than foreseen in past decades (Hazelkorn, 2011). There are numerous examples from across the globe demonstrating that policy-makers are not satisfied with the position of their higher education institutions in the global rankings and therefore have begun to reform their higher education systems and adapt, differentiate or even increase funding to the sector. Within national systems, the rankings have prompted the desire for more and higher ranked higher education institutions ('world-class universities') both as symbols of national achievement and prestige and supposedly as engines of the knowledge economy (Marginson, 2006). Salmi (2009) discussed several patterns of reactions of countries to global higher education rankings. In his view (Salmi, p. 36):

Adopting the goal of building world-class universities does not imply, however, that all universities in a given country can be or should aspire to be of international standing. A more attainable and appropriate goal would be, rather, to develop an integrated system of teaching, research, and technology-oriented institutions that feed into and support a few centers of excellence that focus on value-added fields and chosen areas of comparative advantage and that can eventually evolve into world-class institutions.

Ways to do this, according to Salmi, include upgrading existing institutions, merging institutions to concentrate strengths, or create new ones (or combinations of these strategies)—in order of increasing costs. Authorities appear to be willing to go to great lengths to get 'their' institutions into the top rankings. For instance, Vietnam used much of its World Bank loan for higher education to establish a new 'world class university'. Saudi Arabia used its own ample funds to create a 'world class university' in the area of technology. Similar initiatives exist in a number of countries (including China and South Korea); in some cases they refer to global rankings explicitly and define goals to have a certain number of higher education institutions among the top in the rankings in a given target year. In some countries (e.g. Denmark) mergers of universities were influenced by global rankings too, as their concepts and indicators favor large units. The minister in charge of higher education in France stated that France's poor showing in the rankings underlined the absolute necessity of reforming the country's higher education (Marshall, 2008). The French government has allocated additional funding to create centers of excellence and position France among the highest-ranking universities in the world. The German 'excellence initiatives' award grants to a number of universities to enhance their research performance; this too was influenced by global ranking results. Finally, it has been shown that after the USN&WR ranking was introduced in the US on a larger scale, state appropriations to public universities increased. State appropriations per student were more responsive to USN&WR rankings exposure if a state had more citizens who were politically active, cared more about higher education, and bought USN&WR from the newsstand (Jin & Whalley, 2007).

It can be questioned, however, if redirecting funds to a small set of higher education and research institutions to make them ‘world class’ benefits the whole higher education system: countries’ policies seem to show quite different rates of inclusiveness (Cremonini, Benneworth, & Westerheijden, 2010; Hazelkorn, 2011). The consequences of lack of inclusiveness have not yet been researched empirically, but the hypothesis can be posed that an increase of vertical diversity among higher education and research institutions follows from the winners getting more, the losers less. If that hypothesis were corroborated, the next hypothesis could be that the gaps between institutions become bigger, and that this makes mobility across institutions more difficult for students.

## 5.5 Impact on the Higher Education Reputation Race

One of the major concerns surrounding rankings is their tendency to encourage a reputation race in the higher education sector (van Vught, 2008). The reputation race implies the existence of an ever-increasing search by higher education and research institutions and their funders for higher positions in the league tables. In Hazelkorn’s survey of higher education institutions, 3% were ranked first in their country, but 19% wanted to get to that position (Hazelkorn, 2011). The reputation race has costly implications, and Ehrenberg (2002b) saw rankings as one reason for the escalation in the cost of higher education in the US over the last decades. Rankings exacerbate competition in the sector and as a result higher education institutions have to invest more and more into attracting the most talented students and staff and building the reputation of the school. Since the position in a ranking is not absolute but always relative to how others perform, there is no end to this race. The problem of the reputation race is that the investments do not always lead to better education and research, and that the resources spent might be more efficiently used elsewhere.

One aspect of the reputation race is the concentration of higher education and research institutions’ efforts on research. Most rankings focus disproportionately on research, as shown above, either directly by using research output measures or indirectly by using measures that characterize research-intensive universities (e.g. low student/staff ratio, reputation among peers). Yet the link between the quality in research and quality in teaching is not particularly strong (see Dill & Soo, 2005). This misrepresentation leads not only to incomplete, misleading or bad decision-making (Marginson, 2006) but also—again—to a wasteful use of resources. It leads to a situation where even higher education institutions that see their mission primarily in teaching are forced to invest more in research only because research indicators ‘signal’ the quality of their education in the rankings.

The reputation race thus increases higher education costs significantly (van Vught, 2008). Massy (2003) described the situation in the USA as follows:

Universities press their pricing up to the limits that markets, regulators, and public opinion will allow. They justify their actions in terms of the rising cost of excellence and other factors beyond their control, but that is only part of the story. The impetus for price hikes stems from the university’s own choices.

If public policies in other countries continue to follow the US example and increase the competition in a system where reputation is the major driving force, similar cost explosions should be expected (van Vught, 2008).

## 5.6 Impact on Quality

Any ranking —or for that matter any indicator system, no matter how carefully designed— simplifies reality and offers an incomplete picture of institutional quality. The major problem with this is not so much a somewhat flawed picture of institutions, but that this incomplete framework tends to get rooted as a definition of quality. One of the greatest impacts of rankings might be their ability to redefine what ‘quality’ is in the higher education sector (e.g. Tijssen, 2003). ‘Rankings define the purposes, outputs and values of higher education and interpret it to the world at large, in a fashion that is far more compelling than either the policy reports of governments or the reasoned analyses of scholars of higher education’ (Marginson, 2006). This is particularly the case for league tables that use a single composite indicator for an institution. The characteristics that weigh less or that are not even captured in the rankings are in danger of becoming ignored by the institutions, its funders and by the public in general.

A study of American law schools showed that administrators took rankings heavily into consideration when they defined goals, assessed progress, evaluated peers, admitted students, recruited faculty, adopted new programs, and created budgets. In that way, rankings appeared to create self-fulfilling prophecies by encouraging schools to become more like what the rankings measured. ‘Rankings impose a standardized, universal definition of law schools which creates incentives for law schools to conform to that definition’ (Espeland & Sauder, 2007).

This standardization process is likely to reduce the horizontal diversity in higher education systems. As we mentioned before, the existing global rankings largely take the comprehensive research university as their model (Marginson, 2006). Alternative models, such as vocationally-oriented universities of applied sciences (*Fachhochschulen*) in Germany or liberal arts colleges in the US are underrated by such rankings. In the absence of policies to protect diversity by other means, attention to global research rankings may trigger the evolution of more uniform and mainly vertically differentiated systems.

## 5.7 Impact Through the ‘Matthew Effect’

As a result of the vertical differentiation, rankings are likely to contribute to wealth inequality and expanding performance gaps among institutions (van Vught, 2008). On the one hand, rankings and especially league tables create inequality among institutions that would be hard to distinguish otherwise. They create artificial lines

that imply the danger of becoming institutionalized and real (Espeland & Sauder, 2007). Similarly, rankings have exacerbated competition for the leading researchers and best younger talent, and are likely to drive up the price of high-performing researchers and research groups (Marginson, 2006) making these financially affordable only for the richest institutions.

In short, the competitive framework creates a ‘Matthew effect’ (Matthew 13:12), i.e. a situation where already strong institutions are able to attract more resources from students (e.g. increase tuition fees), government agencies (e.g. research funding), and third parties, and thereby strengthen their market position even further.

## **5.8 Impact on Institutional Responses to Ranking: Gaming the Results**

In systems where the position of a higher education institution in a ranking is assumed to be important in the eyes of its main funders, institutional leaders are under great pressure to improve their institution’s position in the league tables. In order to do so, these institutions sometimes may engage in activities that improve their positions in rankings, but which may have negligent or even harmful effect on the performance in its core activities. Experiences in the US regarding the UNS&WR league tables have shown that higher education institutions are very sensitive to the strategic importance of league tables, leading to actions to present themselves in a more favorable light than would be realistic, or even feel compelled to take recourse to ‘gaming the rankings’ (Dill & Soo, 2005) by manipulation. Ehrenberg (2002a) demonstrated that almost every indicator in the USN&WR ranking may lead to gaming by the institutions. Various examples could be mentioned. For instance, to raise their ranking score on selectivity (an indicator in the USN&WR rankings) some institutions invested in stimulating students to apply although they would never be accepted (Schreiterer, 2008). Also, since the standardized test score of applicants is considered in the ranking, some institutions make submitting the score voluntary to applicants, knowing that only students with a high score have the incentive to provide it, which increases the institution’s average. Faculty salaries also count in the ranking, and there are examples of institutions increasing salaries without discussing whether this would improve teaching and learning or contribute to faculty retention, or if there could be a more effective use of these resources. Finally, since USN&WR counts full-time faculty for its student/staff ratio in the fall term, some departments appeared to encourage their faculty to take an academic leave in spring, not in fall (Espeland & Sauder, 2007).

Moreover, since ranking position is not absolute, but relative to how other institutions perform, institutions have an incentive to make their main competitors look worse. If a ranking has a survey element in it that asks for the reputation of other institutions, it is in the interests to manipulate these results. There are examples of

institutions deliberately downgrading the academic reputation of their competitors (Hazelkorn, 2011; van der Werf, 2009).

## 5.9 Potential for a Positive Impact

Most of the effects discussed above are rather negative to students, institutions and the higher education sector more broadly. The problem is not so much the existence of rankings as such, or the fact that higher education institutions use rankings among other information sources to inform strategic decision-making (Hazelkorn, 2011), but the fact that many of the existing rankings and league tables are flawed and create dysfunctional incentives. What can be concluded from these results is that higher education and research institutions as well as policy-makers at the system level are very responsive to the rankings. If a ranking was able to create useful incentives, it could be a powerful tool for improving the performance in the sector.

The experience with e.g. the CHE Rankings shows that a well-designed ranking may provide institutions with the incentive to genuinely improve their core educational and research processes. Well-designed rankings may be used as a starting point for internal analysis of strengths and weaknesses. Rankings offer the possibility to compare one's own institution with others, either for partnership benchmarking or for positioning oneself against competitors. Some rankings offer institutions the possibility to get tailor-made analyses (e.g. CHE Ranking, SK123). Without rankings, higher education and research institutions have only data on their own institution at their disposal, which does not allow any positioning in the field. To fulfill this task rankings have to offer results on a level of aggregation that corresponds to the needs of internal strategic decision-making.

Similarly, rankings may provide useful stimuli to students to search for the best-fitting study programs, and to policy-makers to consider where in the higher education system investment should be directed for the system to fulfill its social functions optimally. The point of the preceding sections was not so much that all kinds of stakeholders react to rankings, but that the current rankings and league tables seem to invite overreactions on too few dimensions or indicators.

## 5.10 Consequences for the Design of a New Multidimensional Ranking Tool

In the previous chapters, we discussed positive and negative results with regard to existing transparency tools in the current, complex higher education systems. Some commentators have found it remarkable that such different rankings all have the same institutions in their top tiers. Does this indicate that an underlying concept of 'quality' is measured through all the proxies that those rankings define? Cynics may reply that all rankings ensure that the same institutions are at

the top to gain credibility ('face validity' in its crude sense of reinforcing prestige). From our point of view, concerned as we are to design a meaningful ranking for higher education and research institutions, we would rather stay at the level of empirical and methodological critique. In particular, one-dimensional league tables prove to be neither informative nor a valid approach to measure differences between institutions; they do not correspond to the information needs of the different groups of external stakeholders and they do not correspond to the needs within universities for strategic decision-making. Instead we argue that multidimensional, robust rankings are needed to enable various groups of end-users to adapt them to their individual information needs, so that intended behavioral consequences may ensue without (many) unintended, perverse effects on the behavior of higher education and research institutions ('gaming the rankings'), students (being guided towards institutions which may have high reputations but offer low-quality programs) and decision-makers (adapting aims and decisions to available indicators).

In the previous chapters the methodologies of current international and national rankings, both institutional and field-based, have been discussed. In Part II of this volume we will present an alternative and new approach. With regard to the design of such an alternative model of a global, multidimensional ranking, the following general conclusions can be drawn with regard to the methodologies, the set of indicators and the calculation of the current rankings:

- Most international institutional rankings (such as ARWU and THE) focus on one 'type' of higher education institution: the large, international research university. First, they either focus exclusively on research (ARWU, Leiden, and HEEACT) or their selection criteria and/or indicators include a predominance of research (THE). There are only few international rankings that specialize on different aspects (labor market success—*École des Mines*; web presence—*Webometrics*) and hence include other types of institutions, too.
- As the most prominent and influential global rankings are mostly confined to measuring research performance, the global perception of a 'world-class university' is practically identical with research excellence (see Salmi, 2009).
- The availability of (bibliometric) databases, the indicators used and the procedures to select the institutions included in most current rankings imply biases in terms of fields as well as language and culture. In line with the Berlin Principles an alternative approach must give more attention to avoiding biases.
- With regard to biases in underlying databases as well as differences in concepts, indicators and measures, issues of validity and reliability are particularly problematic for international rankings.
- Institutional global rankings use either institutional information only or they calculate unweighted averages out of field-based data. (The only exception is the Leiden ranking where the so called 'crown indicator', the field-normalized citation rate, is field-specific by definition.) This raises the question of how to deal with differences between fields in aggregating information in institutional rankings.



Our critical review also resulted in points of departure for a better practice, both theoretically inspired and looking at existing good practices. They are as follows:

- Following the Berlin Principles, rankings should explicitly define and address target groups, as indicators and the way to present results have to be focused.
- Rankings and quality assurance mechanisms are complementary instruments. Rankings represent an external, quantitative view on institutions from a transparency perspective; traditional instruments of internal and external quality assurance are aiming at institutional accountability and enhancement. Rankings may help to ask the right questions for processes of internal quality enhancement.
- For some target groups, in particular students and researchers, information has to be field-based; for others, e.g. university leaders and national policy-makers, information about the higher education institution as a whole has priority (related to the strategic orientation of institutions); a multilevel set of indicators must reflect these different needs.
- Field-based comparisons must be made between higher education and research institutions of similar characteristics, leading to the need for a pre-selection per field-based ranking of a set of more or less homogeneous institutions.
- Rankings have to be multidimensional (see limitations of composite indicators; heterogeneity of preferences/priorities within target groups).
- There are neither theoretical nor empirical reasons for assigning fixed weights to individual indicators to calculate a composite overall score; within a given set of indicators the decision about the relative importance of indicators should be left to the users.
- International rankings have to be aware of potential biases of indicators; aspects of international comparability therefore are an important aspect of our study.
- Rankings should not use league tables from 1 to  $n$  but should differentiate between clear and robust differences in levels of performance. The decision about an adequate number of differentiated sets has to be taken with regard to the number of institutions included in a ranking and the distribution of data.
- Rankings have to use multiple databases to bring in different perspectives on institutional performance. As much as possible available data sources should be used, but currently their availability is limited. To create multidimensional rankings, gathering additional data from the institutions is necessary. Therefore, the quality of the data collection process is crucial.
- Rankings should be self-reflexive with regard to potential unintended consequences and undesirable/perverse effects.
- Involvement of stakeholders in the process of designing a ranking tool is crucial to keep feedback loops short, so as to avoid misunderstandings and so as to enable a high quality of the designed instruments.
- A major issue regards the measures to ensure quality of the ranking process and instruments. This includes statistical procedures as well as the inclusion of expertise of stakeholders, rankings and indicator experts, field experts (for the field-based rankings) and regional/national experts. A major condition for the acceptance of rankings is the transparency about their methodology. The basic

methodology, the ranking procedures, the data used (including information about survey samples) and the definitions of indicators have to be public for all users. Transparency includes informing about limitations of the rankings.

These general conclusions have been an important source of inspiration for how we designed U-Multirank, a new, global, multidimensional ranking instrument. In Part II we will present the design, construction and testing processes that have resulted in the development of U-Multirank.

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