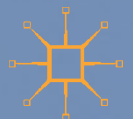


UNIVERSITIES, RANKINGS AND THE DYNAMICS OF GLOBAL HIGHER EDUCATION

Perspectives from Asia,
Europe and North America

Hans Peter Hertig



Universities, Rankings and the Dynamics of Global Higher Education

Hans Peter Hertig

Universities, Rankings and the Dynamics of Global Higher Education

Perspectives from Asia, Europe
and North America

palgrave
macmillan

Hans Peter Hertig
École Polytechnique Fédérale de Lausanne
Lausanne, Switzerland

ISBN 978-1-137-46998-4 ISBN 978-1-137-46999-1 (eBook)
DOI 10.1057/978-1-137-46999-1

Library of Congress Control Number: 2016944058

© The Editor(s) (if applicable) and The Author(s) 2016

The author(s) has/have asserted their right(s) to be identified as the author(s) of this work in accordance with the Copyright, Designs and Patents Act 1988.

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Macmillan Publishers Ltd. London

ACKNOWLEDGMENTS

My very special thanks go to the heads of the 10 universities I looked at in my case studies. Without their help the present book would not have been possible. Patrick Aebischer, Ulrike Beisiegel, Edward Byrne, Heinz Engl, Sung-Mo Kang, Peter Lennie, Peter Mathieson, Samuel L. Stanley, John Sexton and Juichi Yamagiwa—it was great to meet and learn from you! My thanks also go to Vivien Stone, who made sure that the basic rules of decent English were not broken, and last but not least to my wife, Beatrix Boillat, for her patience with a husband she wrongly thought would finally slow down after his formal retirement. It is not so easy, as you will find out yourself in a couple of years!

ABBREVIATIONS

ARWU	Academic Ranking of World Universities (Shanghai Ranking)
ASEAN	Association of Southeast Asian Nations
CNRS	Centre national de la recherche scientifique
DPSL	Dickson Poon School of Law
EC	European Commission
EPFL	École Polytechnique Fédérale de Lausanne—Swiss Federal Institute of Technology of Lausanne
ERASMUS	European Region Action Scheme for the Mobility of University Students
ERC	European Research Council
ETHZ	Eidgenössische Technische Hochschule Zürich—Swiss Federal Institute of Technology of Zürich
EU	European Union
EUA	European University Association
GDP	Gross Domestic Product
GERD	Gross domestic expenditure on R&D
GHE	Globalized higher education
IPPC	Intergovernmental Panel on Climate Change
ITER	International Thermonuclear Experimental Reactor
HEFCE	Higher Education Funding Council for England
HKU	University of Hong Kong
KAIST	Korea Advanced Institute of Science and Technology
KCL	King's College London
MOOC	Massive Open Online Course
MIT	Massachusetts Institute of Technology
MPI	Max Planck Institute
NGO	Non-governmental organization

NIST	National Institute of Standards and Technology (USA)
NSF	National Science Foundation (USA)
NYU	New York University
OECD	Organisation for Economic Cooperation and Development
PPP	Purchasing power parity
QS	Quacquarelli Symonds World University Ranking
R&D	Research and Development
RAE	Research Assessment Exercise
REF	Research Excellence Framework
RPO	Research-performing organization
SBU	Stony Brook University
STI	Science, technology and innovation
THE	Times Higher Education
THE-QS	Times Higher Education and Quacquarelli Symonds joint World University Rankings
THE-TR	Times Higher Education-Thomson Reuters World University Rankings
UNESCO	United Nations Educational, Scientific and Cultural Organization
UR	University of Rochester
USNR	US News & World Report
WCRU	World-class research university
WEF	World Economic Forum
WIPO	World Intellectual Property Organization

CONTENTS

1	Introduction	1
2	Universities and Rankings in Globalized Higher Education	11
3	Tools to Capture and Measure the Rise and Fall of Universities	37
4	Winners and Losers According to Rankings	49
5	A Closer Look at the Ranked: 10 Case Studies in Asia, Europe and North America	77
6	Why Do Universities Rise and Fall? The Crucial Factors	157
7	Going Back to the Source: A Second Look at Rankings	187
8	Outlook	203
	Appendix	207
	Index	221

LIST OF FIGURES

Fig. 6.1	Revenue per student 2004 and 2014 (US\$ real prices)	163
Fig. 6.2	Percentage of postgraduates (masters and PhDs)	170
Fig. 6.3	Research profiles	172

LIST OF TABLES

Table 3.1	The indicators and weighting of the ARWU ranking	42
Table 3.2	The indicators and weighting of the THE-QS ranking	44
Table 4.1	Number and percentage of universities on the rise and the fall, by continent, 2004–2014	51
Table 4.2	Ranking based on the change index: Asia, 2004–2014	52
Table 4.3	Development of key science input and output indicators in Japan, China, South Korea and Singapore	53
Table 4.4	Ranking based on the change index: Europe, 2004–2014	59
Table 4.5	Characteristics of the STI system in the UK, Denmark, Germany and Austria	60
Table 4.6	Ranking based on the change index: North America, 2004–2014	70

Introduction

Never in the history of higher education has one catchword made more headlines than “university rankings”. It perfectly hits the zeitgeist: everything is ranked these days, from whole countries according to their financial solvency or past performance of their national soccer team, to airlines on the basis of timely departures and lateral seat pitches in business class and to restaurants judging the quality and, a new dimension, the “slowness” of their food. Ranking announcements provide the drama for making it into the newspapers and TV news, where the winners and losers, rising stars and fallen angels, one-hit wonders and also-rans feature. Such stories link to the real lives of readers and viewers, arousing emotions of national pride and local grievance. And they fulfil one of the key requirements for being heard in the digital age: to translate highly complex phenomena into short, simple messages, to provide bite-size information that can be easily digested. What could be more popular and convenient than a single figure that seems to say it all?

While never before has one subject made more headlines in higher education, neither has what it stands for—a single policy instrument evaluating universities and their position in the international scene—so challenged the constituency it was originally developed for. The dilemma it has brought to universities and their stakeholders is obvious. Rankings are riddled with methodological flaws, and although some have been fixed as a result of intense and controversial debates among experts from academia and the rankings’ providers, many questions remain (Soh 2013).

And the mathematical soundness of the procedure that leads to a final ranking score is only part of the problem. The spectrum of possible indicators for the strength of universities is extremely broad and the selection and weighting of ranking criteria highly arbitrary. As a result, the verdicts of the different ranking producers differ, and differ strongly, reflecting the huge variety of possible approaches and associated biases regarding scientific disciplines, types of institutions and local contexts in which the institutions act. When the two pioneers of modern rankings, the Academic Ranking of World Universities (ARWU), known as the “Shanghai” ranking, and its European counterpart, the Times Higher Education and Quacquarelli Symonds joint World University Rankings (THE-QS), went public in 2003 and 2004, respectively, they immediately triggered the development of alternatives. Some of the products were stunning. Sly developers succeeded in creating rankings that miraculously catapulted the universities of their own country to the top of the list, in the vicinity of giants like Harvard and Cambridge—a perfect demonstration of the flexibility of approach and the potential of interest-laden manoeuvres. And finally, there is the striking lack of transparency. In 2006, an international rankings expert group developed a number of criteria, the so-called Berlin Principles (UNESCO 2006), that if observed would improve the situation. But the main goals of rankings, the production of easy to read and easy to understand league tables and the maintenance of strict academic standards, are hard to reconcile, and because, in addition, many rankings are linked to commercial interests and compete with others for the highest possible number of users, low transparency will most likely remain a perennial topic in the ranking discourse (Berlin Principles or no).

So why, despite all this—a shaky methodology, questions regarding what is really measured and with what effects, and low transparency—are rankings very much alive and flourishing in an environment in which robust, unbiased methods, objectivity and transparency are so highly valued? Why do the ranked play the game?

- Firstly, because they have realized that against all expectations, global rankings have survived the fierce debates and harsh critics over the 10 years of their existence. Their popularity is undiminished; they look stronger than ever.
- Secondly, because important off-campus stakeholders from politics and business use rankings and partially rely on them. They live and work under time constraints and clutch at any straw that saves

time-consuming engagement with the bewildering mass of information. Rankings allow them to assess and benchmark the status of a specific institution of higher learning they are interested in via a freely available single indicator.

- Thirdly, because rankings have become the ultimate tool for global branding. To do well in major rankings is key for universities that have decided to go global. Top-ranking positions attract high-performing students for master's and PhD programmes, world-class faculty and additional funding from public and non-public sources.
- Fourthly, because rankings, despite all the question marks, represent a handy internal tool. They support a school's governance and strategy units in their benchmarking and controlling exercises. And they offer short cuts for the decision-making of deans and institute directors when it comes to evaluating the quality and potential of not very well known foreign universities in the process of hiring academic staff or finding cooperation partners.
- Finally, because the community is divided. The well ranked, at least the well ranked by the most prestigious league tables, have no reason to attack what serves their cause: to show to the world that they belong to the exclusive group of world leaders. The others, the not so well ranked, are obliged to moderate their criticism. Resistance from their side is easily considered the reaction of bad losers and may back-fire.

In sum: rankings offer a package of pragmatic and opportunistic reasons that outweighs the academic conscience of the ranked and a structural division that hinders the building of a united front. The ranked make the best of it, and the rankings are obviously here to stay.

It is with these dilemmas and concerns in mind—the obvious schizophrenia of condemning an instrument and at the same time using it and acknowledging the status and power it has—that I have researched the rankings field in an attempt to further illuminate and better understand the dynamics of higher education in today's globalized world. It is not a book about rankings per se. Others have done this job. After a slow start and a narrow focus on methodological questions, the last years have brought an avalanche of articles, monographs and readers on the topic. Specifically, non-governmental organizations (NGOs) and international organizations in the field of higher education or touched by it—the World Bank; United Nations Educational, Scientific and Cultural

Organization (UNESCO); Organisation for Economic Cooperation and Development (OECD); European Commission (EC); and European University Association (EUA)—have made considerable efforts to illuminate the subject. They have mobilized specialists on higher education from around the globe who themselves followed with their own contributions and helped to create a community of experts, such as Jamil Salmi (2009), Philip Altbach et al. (2009), Philip Altbach and Salmi (2011), Andrejs Rauhvargers (2011, 2013), Simon Marginson (2010) and Ellen Hazelkorn (2011), who, finally, may now outnumber the rankings on the market. As a result, we now have not only a complete list of the existing rankings—the methodologies behind them, their objectives and their strengths and weaknesses—but also a pretty good understanding of their obvious and potential impact on the various aspects of globalized higher education (GHE) with respect to strategy, management and governance. We are aware of the potential implications for the different stakeholders in the different economic and political contexts in which they act. And we know the challenges the race for world-class science brings to countries that have the will but not the means to become serious competitors.

At least, we think we know. Because while the topics that were taken up and discussed in recent literature on rankings are highly relevant and the conclusions drawn by authors and commentators make perfect sense, empirical evidence is still relatively shaky and thin. It is true that the first truly comprehensive examination of the ranking phenomenon, Ellen Hazelkorn's *Rankings and the Reshaping of Higher Education* (2011), is partially based on empirical material. For years, Hazelkorn toured the globe interviewing representatives of the various stakeholders—university heads, policy makers and students. But most of the information she collected illustrates and witnesses her observations and conclusions rather than empirically hardening them in a systematic way. And the one exception that encompasses more than single university systems, the pooling via on-line questionnaires of 639 higher education institutions in 41 countries, not only suffers from a low response rate (32%) but is more than nine years old; an eternity in the fast moving rankings business. We know that in 2006 58% of higher education leaders were dissatisfied with their current ranking and 71% aspired to a position in the top 25% of international league tables. But would these results be the same today, with a rankings business that is fully institutionalized and much more comprehensive? In the meantime, some have manifested their displeasure, refusing to deliver the figures they were asked for and deliberately dropping out of the rank-

ings. Others have adapted their university's research portfolio to a more ranking friendly profile. How has the hype about rankings of recent years influenced the opinions and the attitudes of the ranked? How do they digest eventual "bad news" regarding their development signalled in ranking series? Inevitably, most of those who were dreaming of a place in the sun have been disappointed; with what effect? How powerful is the new dimension in the ranking game: league tables as a mirror for change?

This is where the present study kicks in. Its goal is to provide empirically supported answers to questions like the above, particularly the ones on the dynamics of the interrelationship between universities and the environment in which they act, globalized higher education. What makes these answers possible is an anniversary. Not mine, but the one of what has become a key player in GHE and a tool a study on change can hardly live without; rankings. In 2014, one of the two pioneers of what can be called the modern generation of rankings, THE-QS, split in two different rankings, THE and QS, after 2009, celebrated its tenth anniversary. Together with ARWU, the Shanghai ranking that was first published a year before, the two rankings have passed their first decade. Ten years, even when considering the small methodological changes introduced by the rankings providers during this period, present quite a robust database. It allows us to (carefully) examine one of the most relevant and intriguing aspects of GHE manifested by leagues tables: changes regarding the status and prestige of universities in the international scene over time, the gain or loss of ground in the race for global competitiveness. What is behind the rise and fall of universities? What makes a previously unremarkable institution transform into a leading university of a nation, if not the world? Why does another school, one that has been a high performer in the past, has produced dozens of Nobel laureates and immediately comes to mind if one is asked to link a specific country with a prestigious university, lose significant ground? What or who is to praise or to blame: governance, structural or organizational reforms, new research priorities, different recruitment policies, changes in the environment in which the institution acts, additional funding? Is the university paying the price for missed opportunities of the past? Is what could look to an outside observer like an enduring structural weakness or the result of a series of wrong decisions nothing more than a temporary underachievement resulting from future-oriented (and wise) strategic decisions? Is a spectacular leap forward, on the other hand, the result of unsustainable measures, likely to fizzle out within a few

years? And to what extent are such actions a result of the instruments that measure and indicate eventual problems and achievements; the rankings?

Obviously, these questions differ markedly in nature and to tackle them calls for a mix of different empirical approaches. Some answers can be provided via quantitative analysis by confronting the success or failure of individual institutions with context variables, such as the country in which they act. But for many others, this will not suffice. The quantitative approach has to be completed with a more in-depth, qualitative inquiry, provided by case studies. Linking the two, providing the data that makes the tandem possible, are rankings. They are the source in identifying “rise and fall” and in hunting for correlations with contextual variables, and at the same time they allow us to select promising case studies. The two approaches, quantitative and qualitative, and the key role of rankings for both of them structure the book. It contains eight chapters. In Chap. 2, I discuss the main challenges globalization has brought to higher education’s main actors, universities; define the conditions that must be fulfilled to successfully compete as a world-class research university (WCRU) with the best of the best in the world; and show the impact of rankings on the WCRUs and why ignoring them is not an option. Chapter 3 deals with these rankings, but only regarding their potential and limits for how they are used in the present study—as an instrument to manifest change and to reveal winners and losers in the international race for prestigious positioning over time. And I briefly discuss the methodology used in the second empirical part of the book; the case studies. Chapter 4 contains the quantitative analysis of 171 Asian, European and North American universities out of the 200 universities in THE-QS’s first edition, from 2004. Where do they stand 10 years later according to the two pioneers of global ranking, ARWU and THE-QS? Does the way they developed hint at a specific areal pattern; do some countries offer better conditions for their aspiring universities than others? In Chap. 5 I use the main outcome of the quantitative analysis performed in Chap. 4, the ranking of the ranked—shortlists of universities on the rise or fall in Asia, Europe and North America—as a pre-selection tool for the case studies. Within the six shortlists—fall and rise in three continents—I apply additional criteria for the final selection of 10 case studies: size, comprehensiveness, legal form, location but also practical considerations like travel logistics (or, more to the point, my project budget). At the heart of the case studies are semi-structured interviews with the heads of the selected universities plus their collaborators in charge of quality assessment. I confronted

them with what I had found in the rankings regarding their performance over the last decade, thus rationalizing how they had been selected for the project in the first place. How did they react, regarding rankings in general and what they indicate about their university in particular? How did they explain eventual discrepancies? What relevant factors in their specific development were not taken into account in the rankings? And to what extent does what the rankings indicate influence future strategic considerations and decisions? But behind the interviews was more than just getting answers to these questions. Visiting the location, the campus and the president's office, observing, talking to people, in an organized way and ad hoc, allowed me to get a feel of the place, to catch its mood, so to speak, and to add a dimension one cannot arrive at via simple desk research. I used it together with all the other findings of the quantitative and qualitative analyses provided in Chaps. 4 and 5 to tackle the main question of the present study in a synthesizing Chap. 6: what makes universities rise or fall? Drawing on a list of factors I consider to be the crucial criteria for making it in the global race for status and prestige as a world renowned research university defined and characterized in Chap. 2—local context, funding, research portfolio, leadership and others—I evaluate their individual weighting vis-à-vis others. In Chap. 7 and 8, finally, I close the circle and discuss the power and limits of rankings in the light of the findings in the previous chapters. The approach I use is delicate. I take rankings at face value for the ranking of the ranked, and I use them as a selection tool for the case studies. In the same case studies, I confront them with the contextualized reality of single universities and question their power to adequately evaluate and rank. It's a balancing act, but it allowed me to tackle interesting questions: To what extent will what I find in the case studies correspond to what the rankings told me I would (five universities on the rise and five on the fall)? What could explain eventual discrepancies? Do rankings miss the point, i.e. overlook crucial factors behind success or failure in the global race for status and prestige? Would the integration of some of these factors improve the accuracy, usefulness and transparency of league tables? The book ends with a short outlook, in which I question the general framework the interrelationship among GHE, WCRUs and rankings defines and the standards it sets. Its merits are obvious, but one shouldn't ignore the weak spots, particularly the high barriers to new players from hitherto neglected research fields and world regions eager to compete for a place in the sun.

Three personal remarks before I jump on board: Firstly, as mentioned above, the main reason for the present book at this moment is the existence of a seemingly solid database provided by 10 years of ranking. Without it the study could not have done. But I consider my contribution also as a warning of possible misuses of the very same empirical material—the likelihood of casual, careless and sensational verdicts based on it. To discuss the position of a university in an annual ranking is one thing; to discuss its development over time and categorize it as a winner or loser in the world race for status and prestige is something else. Showing the pitfalls of rankings' time series, warning of hasty conclusions drawn from purely quantitative approaches and showing the necessity of additional qualitative analyses may all help to prevent serious misunderstandings—in the media, yes, but also behind closed doors at the institutions on the pedestal or in the pillory. From this perspective, the present book is timely. Secondly, a word on the choice of the *École Polytechnique Fédérale de Lausanne* (EPFL), as one of the five “on the rise” case studies (Chap. 5). I spent the last years of my career as Director of the Centre for Area and Cultural Studies there. Although I was fully aware of the fact that EPFL is one of the rising stars in Europe, I started this book with no pre-selection in mind. But EPFL made it easily onto the shortlist I used for the final selection and emerged as a logical choice. This fact in no way coloured my decision to write this book, which I would have done without its inclusion. At the same time, I can't hide the fact that to be able to include EPFL as one of the 10 case studies was a real personal pleasure, not least because it provided me with the opportunity to draw from personal experience and to illuminate aspects normally hidden from the eyes of “passing” observers. Finally, a caveat—this study is not written by an education specialist; underpinning my contribution is a long professional career in science policy and cross-cultural cooperation. The result is a book that is analytical and academic in style but takes into account the profile of the likely readership in different parts of the world: university leaders; university units in charge of reputation management and enrolment; off-campus stakeholders; managers and advisers of the diverse local, national and international science policy communities; rankings producers (hopefully); and the interested media. They are alert and demanding but short on time. One consequence is that I endeavour to keep the text short and straightforward and refrain from unnecessary theorizations and sophistications. Another is the avoidance of excessive referencing. Of course, I follow “the rules of the game” and indicate sources when I really used them. But I also take

the liberty of talking about “hegemony”, for instance, without referring to one of the truly great thinkers and intellectual giants of the twentieth century, Antonio Gramsci, each time I use the term. To be freed from the constraints of an ongoing academic career and the pressure to publish that goes with it provides open space and liberty. I took these with pleasure and hope they may also benefit my readers.

REFERENCES

- Altbach, P.G., L. Reisberg, and L. Rumbley. 2009. *Trends in global higher education. Tracking an academic revolution*. Paris: UNESCO.
- Altbach, P.G., and J. Salmi. 2011. *The road to academic excellence. The making of world-class research universities*. Washington, DC: The World Bank.
- Hazelkorn, E. 2011. *Rankings and the reshaping of higher education. The battle for world-class excellence*. Basingstoke: Palgrave Macmillan.
- Marginson, S. 2010. University rankings, government and social order: Managing the field of higher education according to the logic of the performance present-as-future. In *Re-reading education policies: Studying the policy agenda of the 21st century*, ed. M. Simons, M. Olsson, and M. Peters. Rotterdam: Sense Publishers.
- Rauhvargers, A. 2011 and 2013. Global university rankings and their impact. *EUA Report on Rankings*, Report I 2011 and Report II 2013. Brussels: EUA.
- Salmi, J. 2009. *The challenge of establishing world-class universities*. Washington, DC: The World Bank.
- Soh, K. 2013. Misleading university rankings: Cause and cure for discrepancies between nominal and attained weights. *Journal of Higher Education Policy and Management* 35(2): 206–214.
- UNESCO, CEPES and Institute for Higher Education Policies. 2006. *Berlin principles on ranking of higher education institutions*. Paris and Washington, DC: UNESCO and IHEP.

Universities and Rankings in Globalized Higher Education

Facing a blank screen on my computer, the famous fear of the writer trying to get things started, I look out of the window of my office. Down below are a couple of tables with students having lunch together. From the one closer to my office I overhear six students; if my guess is right, they are master's or PhD students, from life science, and, judging from their English accents, from six different nations and three continents. They discuss work, of course, but work is just one topic among many. They have a very animated discussion on politics, the state of the world in autumn 2014, the Middle East, Ukraine, Africa, massive migrations as a result of the many unsolved conflicts, what to do with refugees and how to ease the harm and intolerable suffering. Some positions are controversial, but the debate is full of respect for the other and the otherness of the other. What a great experience! What a wonderful result of globalized higher education (GHE), bringing these youngsters together, and how promising the outlook for the future of academia and its place in the world.

Change of scene: the first lines are written, the spell is broken, let's go to work. Going to work in this case means taking a closer look at the framework in which the subject under scrutiny, a specific aspect of the dynamics of GHE, the rise and fall of universities and interrelationships with a key element of modern tertiary education, rankings. The first part of the chapter presents and discusses what I consider the main characteristics and trends of GHE. There are the obvious merits, such as those reported in the anecdote above, but there are also the question marks. And, of course,