New Trends in University Rankings

1st International Seminar on Higher Education Rankings and E-Learning, 22-23 September 2011, Barcelona

Gero Federkeil, CHE Centre for Higher Education, Germany

www.che.de
The CHE – A Short Introduction

The traditional ranking approach

New trends: Multi-dimensional rankings

The U-Multirank Project

Conclusions
Private, not-profit organisation
Founded in 1994 by Bertelsmann Foundation and German Rectors Conference

Goal:
Initiate and promote of reforms in German higher education

Activities:
- HE policy issues (e.g. Bologna, funding, …)
- Consulting
- Communication & training
- Ranking

Barcelona, September 2011
The CHE - Centre for Higher Education

- Ranking of German universities among founding tasks of CHE
  - First ranking published in 1998

- Extension of fields and indicators
  - Continuous further development of methodology

- Internationalisation
  - Extension of CHE Ranking: Austria, Switzerland, Netherlands
  - Cooperation with Fundación CYD to develop a ranking in Spain
  - U-Multirank project to “develop the concept and test the feasibility of a global multi-dimensional university ranking”
  - Founding member of IREG –Observatory on Academic Rankings and Excellence (“Berlin Principles”)
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Conclusions
The growing importance of rankings

- Rankings have become a wide spread phenomenon now:
  - about 10 global rankings
  - national rankings in about 50 countries

- Rankings have an impact on
  - students
  - strategies of universities (e.g. cooperations, mergers)
  - politics (e.g. Excellence / exchange programmes)

- Yet they remain controversial
### Academic Ranking of World Universities - 2010

<table>
<thead>
<tr>
<th>World Rank</th>
<th>Institution</th>
<th>Country</th>
<th>National Rank</th>
<th>Total Score</th>
<th>Score on Alumni</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Harvard University</td>
<td>🇺🇸</td>
<td>1</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>University of California, Berkeley</td>
<td>🇺🇸</td>
<td>2</td>
<td>72.4</td>
<td>67.6</td>
</tr>
<tr>
<td>3</td>
<td>Stanford University</td>
<td>🇺🇸</td>
<td></td>
<td>72.1</td>
<td>40.2</td>
</tr>
<tr>
<td>4</td>
<td>Massachusetts Institute of Technology</td>
<td>🇺🇸</td>
<td></td>
<td>71.4</td>
<td>70.5</td>
</tr>
<tr>
<td>5</td>
<td>University of Cambridge</td>
<td>🇬🇧</td>
<td>1</td>
<td>69.6</td>
<td>88.5</td>
</tr>
<tr>
<td>6</td>
<td>California Institute of Technology</td>
<td>🇺🇸</td>
<td></td>
<td>64.4</td>
<td>50.3</td>
</tr>
<tr>
<td>7</td>
<td>Princeton University</td>
<td>🇺🇸</td>
<td>6</td>
<td>60.8</td>
<td>56.4</td>
</tr>
<tr>
<td>8</td>
<td>Columbia University</td>
<td>🇺🇸</td>
<td>6</td>
<td>60.4</td>
<td>70.7</td>
</tr>
<tr>
<td>9</td>
<td>University of Chicago</td>
<td>🇺🇸</td>
<td>9</td>
<td>57.3</td>
<td>65.5</td>
</tr>
<tr>
<td>10</td>
<td>University of Oxford</td>
<td>🇬🇧</td>
<td>2</td>
<td>56.4</td>
<td>56.2</td>
</tr>
<tr>
<td>11</td>
<td>Yale University</td>
<td>🇺🇸</td>
<td>9</td>
<td>54.6</td>
<td>48.6</td>
</tr>
<tr>
<td>12</td>
<td>Cornell University</td>
<td>🇺🇸</td>
<td>10</td>
<td>52.6</td>
<td>42.3</td>
</tr>
<tr>
<td>13</td>
<td>University of Cambridge</td>
<td>🇬🇧</td>
<td>3</td>
<td>52.2</td>
<td>27.2</td>
</tr>
<tr>
<td>14</td>
<td>University of California</td>
<td>🇺🇸</td>
<td>1</td>
<td>50.0</td>
<td>15.1</td>
</tr>
<tr>
<td>15</td>
<td>University of Pennsylvania</td>
<td>🇬🇧</td>
<td>5</td>
<td>49.0</td>
<td>32.9</td>
</tr>
<tr>
<td>16</td>
<td>University of Washington</td>
<td>🇺🇸</td>
<td>14</td>
<td>48.7</td>
<td>24.4</td>
</tr>
</tbody>
</table>
The critique of the traditional ranking model

- Ranking of whole institutions
  - Composite indicators blur profiles and strengths & weaknesses
  - There are neither theoretical nor empirical arguments for assigning specific pre-defined weights to single indicators
  - Most users are interested in information about “their” field
  - Institutional rankings give misleading averages across fields/units

- Composite overall indicator

- League table approach
<table>
<thead>
<tr>
<th>Shanghai Jiaotong Ranking</th>
<th>QS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Weight</td>
</tr>
<tr>
<td>SCI publications</td>
<td>20 %</td>
</tr>
<tr>
<td>Publications Science &amp; Nature</td>
<td>20 %</td>
</tr>
<tr>
<td>Highly cited authors</td>
<td>20 %</td>
</tr>
<tr>
<td>Nobel Prizes &amp; Field Medals</td>
<td>20 %</td>
</tr>
<tr>
<td>Alumni with Nobel Prizes</td>
<td>10 %</td>
</tr>
<tr>
<td>Size</td>
<td>10 %</td>
</tr>
</tbody>
</table>
The critique of the traditional ranking model

- Ranking of whole institutions
  - Most users are interested in information about “their” field
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- Composite overall indicator
  - Composite indicators blur profiles and strengths & weaknesses
  - There are neither theoretical nor empirical arguments for assigning specific pre-defined weights to single indicators

- League table approach
  - Small differences in the scores of indicators lead to big differences in league table
  - Give false impression of exactness (“Number 123 is better than number 127”)
New trends in rankings

Although this is still the dominant model there are new trends:

- Alternative approaches: Multi-dimensional rankings
- Changes within existing rankings
Changes in existing rankings

- Introduction of field based-rankings in addition to institutional rankings
- At least in lower part of ranking: broad groups instead of league tables (e.g. 51 – 75, 76 – 100 ...),
A new approach: Multi-dimensional rankings

There is a number of rankings with a different approach:

- **National rankings, e.g.:**
  - CHE ranking (Germany, Austria, Switzerland, Netherlands)
  - College Navigator Taiwan
  - Good University Guide Australia
  - Ranking Project Spain (Fundación CYD – CHE)

- **International rankings, e.g.**
  - Leiden Ranking
  - U-Multirank Project
Multi-dimensional rankings; Basic concept

- Basic assumption: There is no objective ranking as there is no single, objective concept of quality (“Quality is in the eye of the beholder”)
- Different users have different ideas about quality & different preferences with regard to indicators
- Each ranking reflects the views of the producers of rankings
- As the producers of rankings have to define a set of indicators, but
  this set should be broad and be based on stakeholder consultation, and,
  the decision about the relevance of indicators should be left to users

Multi-dimensional rankings do not calculate composite indicators with pre-defined weights of single indicators!
Multi-dimensional ranking: CHE

Field based ranking

- Inclusion of 34 fields
- More meaningful information to users
- Reflects internal heterogeneity of universities

Multi-dimensional ranking

- ~20 to 25 indicators, each stands for itself
- Show profiles, allow for an analysis of strengths & weaknesses at relevant level
- Refer to a user-focused concept of good performance / quality

Rank group approach

- Top, Middle, Bottom group
- Avoids false impressions of exactness
- Takes serious limitations in data (quality)
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New trends: Multi-dimensional rankings

The U-Multirank Project

Conclusions
The project

- Commissioned by the European Commission
- 2-year project, 2009 – June 2011
- Ján Figel, the former European Commissioner for Education, Training, Culture and Youth:
  “- to allow stakeholders to make informed choices;
  - to help institutions to position themselves and improve their performance”
- Two phases:
  o Design of new instrument
  o Testing the feasibility of new instrument
Specification of U-Multirank

- **Five dimensions:**
  - Teaching & learning
  - Research
  - Knowledge transfer
  - International orientation
  - Regional engagement

- Long list of indicators to be tested in pilot project

- Development of **data collection tools and processes** (questionnaires, definitions, FAQs, communication + feedback processes)

- Methods for building **ranking groups** instead of league tables

Barcelona, September 2011
Testing U-Multirank

• Two levels:
  • Institution (FIR)
  • Field (FBR)

• Global sample of higher education and research institutions: 159 (target: 150), 2/3 Europe, 109 completed institutional questionnaires

• Two fields:
  • Business studies
  • Engineering (electrical and mechanical)
Classification and Ranking: Mapping diversity

Diversity of higher education institutions in Europe & the world

Identifying comparable institutions that can be compared in one ranking

CLASSIFICATION
Description of horizontal diversity
↓
Types/profiles

RANKINGS
Assessment of vertical diversity
↓
Performance

Complementary instruments of transparency
First element: Selection of a comparable set of universities based on institutional profiles

Example:

- Comprehensive, teaching oriented institution
- Mainly undergraduate education
- Low research orientation
- Some activities with regard to knowledge transfer
- Low international orientation
- Regionally embedded (e.g. recruiting)

Comparison / ranking among this particular profile of institutions
Second element: ranking – Multi-dimensional ranking

<table>
<thead>
<tr>
<th>Institution</th>
<th>Teaching &amp; Learning</th>
<th>Research</th>
<th>Knowledge transfer</th>
<th>International orientation</th>
<th>Regional engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution 1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 5</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Institution 7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Institution 9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

No composite indicator!

No number 1!
Second element: Selection of indicators according to user’s preference

Human Medicine

Universities

You already know which subject you want to study? With My Ranking you can select your own criteria, to compare faculties and courses at different universities. Find out which universities fulfill your criteria best and then save your results in your personal My Rankings Archive. [more information]

Please choose up to five criteria

1. Overall study situation (S)
2. Support in bedside teaching (S)
3. student/staff ratio (F)
4. Results in the preliminary examination (F)
5. Dovetailing pre-clinic - clinic studies (S)

(S)=Student's judgement (F)=Fact (P)=Professor's judgement

Selection of (up to) 5 indicators
Priorisation of indicators
Second element: Selection of indicators according to user’s preference

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Uni Heidelberg Medizinische Fakultät Heidelberg</th>
<th>Uni Witten/Herdecke (priv.)</th>
<th>Uni Greifswald</th>
<th>Uni Lübeck</th>
<th>TU Dresden</th>
<th>Uni Heidelberg Medizinische Fakultät Mannheim</th>
<th>Uni Maastricht (NL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dovetailing pre-clinic - clinic studies (S)</td>
<td>2.0</td>
<td>1.5</td>
<td>1.9</td>
<td>1.7</td>
<td>2.1</td>
<td>1.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Results in the preliminary examination (F)</td>
<td>1.8</td>
<td>1.5</td>
<td>2.0</td>
<td>2.0</td>
<td>2.3</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>student/staff ratio (F)</td>
<td>21.8</td>
<td>10.8</td>
<td>25.4</td>
<td>28.9</td>
<td>23.6</td>
<td>24.5</td>
<td>31.2</td>
</tr>
<tr>
<td>Support in bedside teaching (S)</td>
<td>71.6</td>
<td>0.0</td>
<td>68.5</td>
<td>67.8</td>
<td>68.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Overall study situation (S)</td>
<td>2.4</td>
<td>1.1</td>
<td>2.3</td>
<td>2.3</td>
<td>2.6</td>
<td>1.7</td>
<td>1.5</td>
</tr>
</tbody>
</table>

The result is a personalised ranking.
Second element: Selection of indicators according to user’s preference

<table>
<thead>
<tr>
<th>Research Reputation</th>
<th>much third party funding</th>
<th>many publications</th>
<th>many citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TU München</td>
<td>5,6</td>
<td>22,4</td>
<td>394,0</td>
</tr>
<tr>
<td>Uni Düsseldorf</td>
<td>5,2</td>
<td>19,3</td>
<td>336,9</td>
</tr>
<tr>
<td>Uni Freiburg</td>
<td>9,4</td>
<td>13,7</td>
<td>394,2</td>
</tr>
<tr>
<td>Uni Heidelberg Medizinische Fakultät Heidelberg</td>
<td>9,3</td>
<td>15,9</td>
<td>305,3</td>
</tr>
<tr>
<td>Uni Würzburg</td>
<td>9,6</td>
<td>13,8</td>
<td>387,7</td>
</tr>
<tr>
<td>Uni Kiel</td>
<td>9,8</td>
<td>17,8</td>
<td>424,3</td>
</tr>
<tr>
<td>Uni Heidelberg Medizinische Fakultät Mannheim</td>
<td>11,2</td>
<td>17,7</td>
<td>373,7</td>
</tr>
<tr>
<td>Uni Frankfurt a.M.</td>
<td>11,4</td>
<td>15,5</td>
<td>374,9</td>
</tr>
</tbody>
</table>

Looking different with different indicators
## Feasibility of Dimensions and Indicators

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Total # Indicators</th>
<th>After Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A: need no/minor modification</td>
</tr>
<tr>
<td><strong>Teaching &amp; Learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>FBR</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>FBR (student survey)</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>FBR</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td><strong>Knowledge Transfer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>FBR</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td><strong>International Orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>FBR</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td><strong>Regional Engagement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FBR</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
Teaching & Learning

- Student staff ratio
- Graduation rate
- Inclusion of work experience
- Qualification of academic staff
- Rel. rate of grad.(un)employment
- Student gender balance
- Inclusion of employability issues
- Inclusion of work experience
- Computer facilities: internet access
- Student gender balance

Student satisfaction:

- overall judgement of program
- opportunities for a stay abroad
- facilities (libraries, labs, rooms, IT)
- organisation of program
- research orientation of program
- support by teachers
- opportunities for a stay abroad
- social climate
- support by teachers
- opportunities for a stay abroad
U-Multirank - Indicators

Research
- external research income
- research publication output
- doctorate productivity
- field normalised citation rate
- highly cited research publications

Knowledge Transfer
- ac staff with non HE experience
- joint research contracts with priv sector
- University-Industry joint publ
U-Multirank - Indicators

International Orientation

- incoming and outgoing students
- % international students
- international academic staff
- international research grants
- international joint research publications
- % international students
- internat. doctorate graduation rate

Regional Engagement

- Graduates working in the region
- Student internships in region
- Student internships in region
- Summer schools for sec. ed. students
- Student internships in region

The European Commission will:

- Launch U-Multirank: a new performance-based ranking and information tool for profiling higher education institutions, aiming to radically improve the transparency of the higher education sector, with first results in 2013. By moving beyond the research focus of current rankings and performance indicators, and by allowing users to create individualised multidimensional rankings, this independently run tool will inform choice and decision-making by all higher education stakeholders.

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Conclusions

- Rankings are here to stay, their relevance will rather increase
- There is a need for transparency about European Higher Education Area

- Multi-dimensional rankings are a new approach which
  - is user-driven, taking into account that there is no single objective ranking, and,
  - is able to make visible the diversity of higher education institutions by showing different profiles, and
  - is looking beyond research excellence only (teaching & learning, transfer ...)
Within the context of U-Multirank there could be one particular ranking among Open Universities /distance education institutions.

Some indicators of U-Multirank are applicable,

the appropriateness of others would have to be discussed, and

there is surely a need for new, particular indicators.
But finally ...
There might be some limits to rankings in general

„You‘re kidding! You count publications?“
Thank you very much!

More information:

www.che-ranking.de
www.u-multirank.eu
gero.federkeil@che-ranking.de
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