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Ellen Hazelkorn
Dublin Institute of Technology, ellen.hazelkorn@dit.ie

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International Comparisons: The Good, the Bad and the Ugly

Professor Ellen Hazelkorn
Director, Research and Enterprise, and Dean of the Graduate Research School
Head, Higher Education Policy Research Unit (HEPRU)
Dublin Institute of Technology
HETAC General Induction/Training for Panel Members
26 March 2010

Higher Education Policy Research Unit

- Institutions compared with inappropriate peers, and inputs/outputs treated in equivalent manner (Turner, 2005)

- Hierarchical system has developed effectively rendering 'different activities differently valued, such as research over teaching and sciences over humanities.' (Gumport, 2000)

- 'For parents and prospective students, lots of information is better than less information…' (R Osgood, President, Grinnell College, USA; *Inside HE*, 10/09/2007)

- 'Hospitals, banks, airlines and other public and private institutions serving the public are compared and ranked, why not universities? (Egron-Polak, IAU Horizons, May 2007)

Contents

- Why international comparisons
- Comparing institutions and systems
- Indicators
- Lessons – what are we trying to achieve?

1. Why international comparisons

Setting the Context (1)

1. Globalisation is forcing change across all knowledge-intensive industries – including higher education – creating a 'single world market';

2. Because the application of knowledge is the source of social, economic and political power, investment in knowledge is seen as critical to national geo-political positioning. The 'battle for brainpower' now complements traditional struggles for natural resources;

3. Increasing emphasis on elite and world-class. Vertical stratification becoming steeper, with re-newed attention to status and reputation;

4. Trend towards market-steering governance mechanisms with increased emphasis on accountability and transparency;

Setting the Context (2)

5. Institutional existence is not guaranteed but has to be earned. Higher education is required to respond to a diverse range of global, national, regional and local stakeholders;

6. Worldwide comparisons are becoming increasingly significant – at all levels and for all stakeholders:

   - If higher education is the engine of the economy, then the productivity, quality and status of higher education and university-based research becomes a vital indicator;
   - Global competition is reflected in the rising significance and popularity of rankings which attempts to measure the knowledge-producing and talent-catching capacity of higher education institutions (HEIs).

Higher Education Context

- Globalisation and internationalisation of HE → competition between HEIs for students, faculty, finance, researchers;
- Students have become savvy participants, consumers and customers as the link between HE and career/salary grows;
- Growing importance of global networks – for education exchange, joint programmes, research, staff development and training, etc. National pre-eminence is no longer enough;
- Performance assessment of scientific-scholarly research is increasingly important, especially for publicly funded research;
- Greater focus on outputs and performance as mechanism for financing higher education and actively encouraging differentiation and modernisation.

Building Ireland's Smart Economy (2008)

Emphasis on excellence and performance:

- Restructuring the higher education system will be a priority with a new Higher Education Strategy to *enhance system wide performance*;
- Higher Education institutions will be supported in pursuing new organisational mergers and alliances that can *advance performance* through more effective concentration of expertise and investment;
- We will *improve performance measurement* through the development of *specific outcomes and indicators* for all sectors, organisations and individuals;

EU Context

Delivering on the modernisation agenda for universities: education, research and innovation (May 2006)

'Universities should be funded more for what they do than for what they are, by focusing *funding on relevant outputs rather than inputs*,…Competitive funding should be based on *institutional evaluation systems* and on diversified performance indicators with *clearly defined targets and indicators supported by international benchmarking*'.

Europe 2020: A European strategy for smart, sustainable and inclusive growth (March 2010)

...Enhance the *performance and international attractiveness* of Europe's higher education institutions and raise the overall quality of all levels of education and training in the EU...'

2. Comparing institutions and systems

Typology of Assessment Systems

- *College guides*: fulfil public service role, helping and informing domestic undergraduate students and their parents.
- *Accreditation*: used to certify the legitimacy of a particular HEI including the authority to award qualifications, either directly or via another agency;
- *Evaluation and Assessment:* used to assess quality of research and/or teaching & learning to compare and sometimes rank performance;
- *Benchmarking*: used to manage more strategically, effectively and efficiently as systematic comparison of practice and performance with peer institutions.
- *National rankings*: underpin accreditation, benchmark performance, aid resource allocation;
- *Global rankings:* international comparison of institutional performance and reputation.

Obsession With Rankings

Satisfy a 'public demand for transparency and information that institutions and government have not been able to meet on their own.' (Usher & Savino, 2006, p38)

- Cue to students/consumers re: monetary 'private benefits' of university attainment and occupational/salary premium,
- Cue to employers what they can expect from graduates,
- Cue to government/policymakers re: quality, international standards & economic credibility,
- Cue to public because they are perceived as independent of the sector or individual universities,
- Cue to HEIs because they want to be able to benchmark their performance.

Rise in Popularity and Notoriety

- Rankings part of US academic system for 100 yrs, but today increasing popularity worldwide
  - 45+ countries have national rankings
  - 10+ global rankings
- Appear to gauge world-class status and national competitiveness by number of HEIs in top 20, 50 or 100…
- During current global recession, rankings appear to provide simply solutions for benchmarking, value-for-money, investor-confidence;
- 17,000 HEIs worldwide, but obsessing about less than 100.

Most Influential Rankings

- **Global**
  - Shanghai Jiao Tong Academic Ranking of World Universities (ARWU) (2003)
  - *THE* QS World University Rankings (2004)
  - Webometrics (2004)
  - Performance Ranking of Scientific Papers for Research Universities (Taiwan) (2007)
- **Regional**
  - AsiaWeek (2000)
  - CHE ExcellenceRanking Graduate Programmes (2007)
- **Single-country**
  - Das CHE-HochschulRanking (Germany) (1980s)
  - *US News and World Report* (US) (1980s)
  - *Sunday Times*, *Guardian* (UK)
  - *Asahi* Shimbun (Japan) (1994)
- **Business Schools**
  - Financial Times
  - Business Week
- **Graduate Schools**
  - *US News and World Report* Best Graduate Schools

Recent Additions

- Leiden Ranking (Centre for Science and Technology Studies [CWTS] (2008) (http://www.cwts.nl/ranking/LeidenRankingWebSite.html)
- World's Best Colleges and Universities (US News and World Report [US] (2008) (http://www.usnews.com/sections/education/worlds-best-colleges/index.html)
- Global University Rankings (RatER (Rating of Educational Resources) (2009) (http://www.globaluniversitiesranking.org/)
- SCImago Institutions Rankings (SIR): 2009 World Report http://www.scimagojr.com/index.php
- EU Multi-dimensional Global University Ranking (to be piloted 2010) (http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1942&format=HTML&aged=0&language=EN&guiLanguage=en)
- QS World University Rankings (from 2010)
- THE Thomson Reuters (from 2010)

Measuring and Comparing Performance

- EU Classification Project – a European Carnegie System
- EU Multi-dimensional Ranking – pilot 2011
- Assessment of University-Based Research – EU Expert Group
- OECD AHELO Project
- HEA/Forfás Mapping Exercise
- *Sunday Times* Ranking
- Various indicator projects: RIA, IUA
- Outcome of Hunt Review?
  - Student satisfaction survey
  - Research assessment exercise
  - Performance contracts

How Rankings Work

- Compare institutions by using a range of indicators
  - Different indicators are weighted differently
  - Choice of indicators/metrics are not value-free
- 3 different data sources
  - Independent third parties – e.g. government sources
  - University sources – institutional
  - Survey data – opinions or experiences of stakeholders – students, peer institutions, faculty
- Final score aggregated to single digit

Problems with Rankings

- No such thing as an objective ranking – because:
  - The evidence is never self-evident
  - Measurements are rarely direct but consist of proxies,
  - Choice of indicators and weightings reflect value-judgements or priorities of rankers.
- Rankings do not measure what people think they measure:
  - Each system measures different things – and are not directly comparable;
  - Measure what is easy and predictable;
  - Concentrate on past performance rather than potential;
  - Emphasis on quantification as proxy for quality.

Do Rankings Measure Quality?

- Each ranking system uses different indicators with different weightings – hence each has a different concept of quality;
- Different ranking systems 'provide consistent data for some institutions and inconsistent ones for others' (Usher and Medow, 2009, p13);
- Emphasis on research distorts and undermines other aspects of higher education: teaching and learning, engagement, knowledge exchange and technology transfer;
- Rankings measure the benefits of age, size and money. They benefit large institutions and countries which have more researchers and hence more output.

CHE-HochschulRanking

- Multi-dimensional inter-active Student Information System
  - Designed to aide undergraduate student choice
- User driver metrics and weighting:
  - ’My Ranking’ function enables students to combine indicators in accordance with own preferences.
- Banding not ranking
- Ranking Overview
  - Top Group (green upward arrow),
  - Middle Group (yellow sideward arrow)
  - Bottom Group (red downward arrow)

Please select a sort sequence

alphabetical

Measuring the Quality of the System

'With rapid technology changes, single universities or research institutes may not be able to accommodate the needs of business development for skills, knowledge and innovation....[T]he most successful high-science locations today are those that take a multiple form, rather than a link between firms and a single university. ' (OECD, 2006, p119).

'[W]e must address the rights of all citizens to share in [society's] benefits' (Australia Review of HE, 2008, pxi)

- *University Systems Ranking. Citizens and Society in the Age of Knowledge* - Lisbon Council 2008
- *The QS SAFE (*2008) System, Access, Flagship, Economics
- *Washington Monthly* (2005) Social mobility, Research and Service
- *Saviors of Our Cities: Survey of College and University Civic Partnerships*

QS SAFE – National System Strength Rankings		Lisbon Council University System Ranking	
Country	***Rank***	***Country***	***Rank***
United States	1	Australia	1
United Kingdom	2	United Kingdom	2
Australia	3	Denmark	3
Germany	4	Finland	4
Canada	5	United States	5
Japan	6	Sweden	6
France	7	Ireland	7
Netherlands	8	Portugal	8
South Korea	9	Italy	9
Sweden	10	France	10
Switzerland	11	Poland	11
China	15	Hungary	12
Ireland	17	Netherlands	13
Finland	18	Switzerland	14
Austria	20	Germany	15
South Africa	30	Australia	16
Turkey	40	Spain	17

3. Indicators

What do People Want to Know?

- Institutional/field data re. level of intensity, expertise, quality and competence;
- Efficiency level: how much output vis-à-vis funding;
- Quality of faculty and PhD students;
- Attraction capacity and internationalisation;
- Research infrastructure: level of use and efficiency;
- Employability of graduates: trends and competences
- Impact of research on teaching, staff/student ratio;
- Research capacity of HEI & research team;
- Performance benchmarked regionally, nationally & internationally.

What is Measured?

- ‘Beginning Characteristics’/Student Ability – entry scores
- Learning Inputs/Staff – qualifications; teaching ratios
- Learning Inputs/Resources – expenditure on infrastructure
- Learning Outputs – graduation & retention rates
- Final Outcomes – employment rates, further education
- Research – publications/citations, awards, budgets, patents
- Reputation – peer appraisal; opinions of other stakeholders

Indicators are Proxies for Quality

- Student Selectivity = Institutional Selectivity
- Citations & Publications = Academic Quality
- Budget & Expenditure = Quality of Infrastructure
- Employability = Quality of Graduates
- Reputation = Overall Status and Standing
- Nobel Winners = Quality of Research/Research Standing'

Select Indicators re teaching and learning:

- Text books and lecture materials sold
- Reviews of publications by students on the internet
- Courses for students abroad
- Graduate student numbers – PhD and Masters
- PhD completion rates and time to completion
- Graduate Masters students and their first jobs
- Internationalization: students and academics
- Student satisfaction surveys

Select Indicators re research activity:

- Publications in scientific journals/international journals
- Citations of publications by peers in scientific journals
- Reviews of publications by peers on the internet
- Cooperation with peers, e.g. contributions to courses
- Scientific awards
- Number of monographs
- Keynote speeches and invited lectures
- Editorship of scientific journals
- Invitations by journals to review scientific publications
- Invitations to contribute to special issues or collections
- Received grants
- Co-operation with international networks
- Number of visiting lecturers
- Published conference papers
- Development of research data base
- Significant national or international conferences
- International reviews participated in
- Membership of international bodies
- Awards and prizes

Select Impact Indicators re. policy makers :

- Publications via dissemination channels of policy makers
- Citations of publications by policy makers in reports, etc.
- Reviews of publications by policy makers
- Cooperation with policy makers
- Lectures for policy makers
- Memberships of bodies advising policy makers.
- Grants received from policy makers

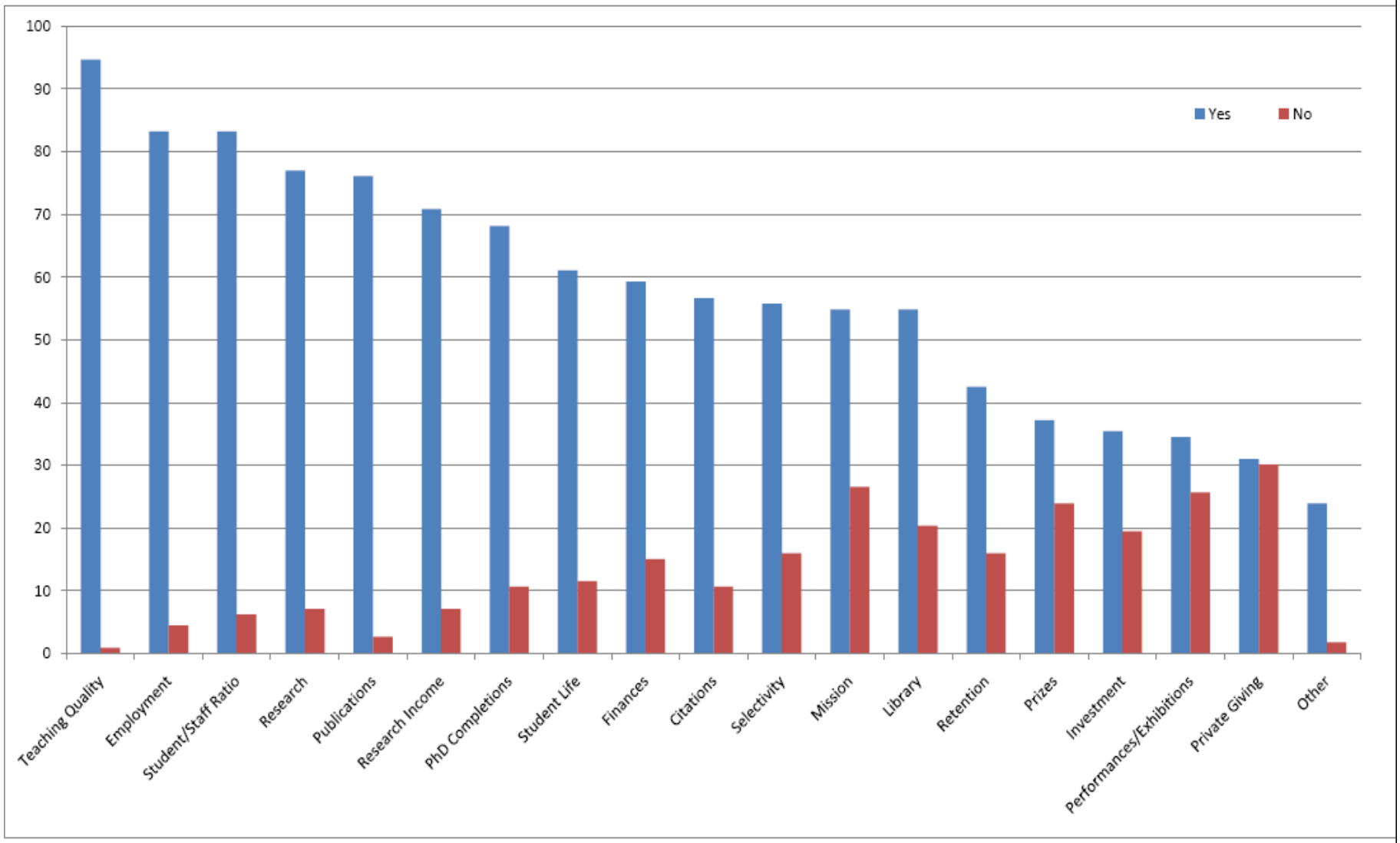
Select Impact indicators re business and professions:

- Patents, licensing, company formation, etc.
- Publications
- Citations of publications in their dissemination channels.
- Reviews of publications
- Collaborative research
- Grants received
- Lectures for business community.
- Memberships of bodies advising business community.
- Awards.
- Memberships of prestigious organizations.

Select Indicators re public/community engagement :

- Publications via public channels
- Citations of publications in media
- Reviews of publications by broader public
- Contribution to public meetings and exhibitions
- Awards by the broader public
- Lectures for public audiences
- Grants received
- Historical research leading to preservation of media and/or other cultural artefacts;
- Enhancement of performing arts quality/scope resulting as indicated by greater public participation and satisfaction captured by the audience surveys;
- Contribution to policy outcome producing measurable significant or outstanding benefit.

Ideal Indicators (% respondents, 2006)



Users and Indicators

	Publications Outputs	Quality & Scholarly Output	Human Capital	Investment	Economic & Social Benefit	End-User Esteem
HE Management	x	x	x			x
Regional/ National Governments	x	x	x	x	x	
Individual Researchers	x	x				
Peer HEIs	x	x	x			
Industry		x			x	x
Public Opinion		x	x	x	x	

Data Sources

- International data collected by UNESCO, OECD and EU
  - OECD is most active
    - *Education at a Glance*, based on PISA (Programme for International Students Assessments)
    - National/country studies
    - Comparative studies, e.g. HE and Regions
  - International rankings of HEIs
- Government data: most accurate but definitional & contextual differences
- Institutional data/institutional research: Riches source of information but can be open to distortion or manipulation
- Survey data: valuable stakeholder opinion measures esteem, but concerns about sample size and gaming

Ideal Unit of Analysis & Data Source (2006)

Preferred Unit of Analysis	Unit Data Source
• 41% - Institutional level	31% - Institutional data
• 30% - Department level	25% - Publicly available data
• 29% - Programme level	25% - Questionnaires
	20% - Peer Assessment

4. Lessons – what are we trying to achieve?

Why cross-national comparisons?

- *Improved data-based or evidence-based decision making:* can prompt discussions about what constitutes success and how HEI can better document and report that success.
- *Comparable information on HEIs*, teaching & research makes it easier for students and researchers to make informed choices on where and what to study and where to work;
- *Identification and replication of model programs:* can encourage HEI to be open to using benchmarking to identify and share best practices.
- *Political and societal support for HE* can only be maintained by a system of quality assessment, performance enhancement and value-for-money – providing investor confidence;

Comparing 'apples with oranges' (1)

- System and Institutional nomenclature
  - Qualifications Frameworks: Ireland, EU, ISCED
  - Classification Systems: Carnegie, EU
- Education performance: new entrants vs. re-entrants; mobility between 5B and 5A; measures of attainment; participation; graduation/completion rates; 1st destination; student learning;
- Student mobility and international student enrolments – assumes common definition
- Research activity: research active; awards, income and expenditure; publications and other outputs; honours/awards

Comparing ‘apples with oranges’ (2)

- Impact: citations, peer esteem, student learning, graduation, careers, salary,
- Finances: helpful for broad patterns but too many national differences as to what is included, e.g. revenue and expenditure, student living costs, tuition fees, etc.
- International rankings of institutions: different methodologies each of which measure quality differently.

Draft EQF levels	EHEA Framework (Bologna)	NFQ Levels	NFQ Major Award-types	ISCED
1		1	Level 1 Certificate	0
		2	Level 2 Certificate	1
2		3	Level 3 Certificate, Junior Certificate	2
3		4	Level 4 Certificate, Leaving Certificate	3
4		5	Level 5 Certificate, Leaving Certificate	
5	Short Cycle within First Cycle	6	Advanced Certificate (FET award); Higher Certificate (HET award)	4
6	First Cycle	7	Ordinary Bachelor Degree	5B (Short Cycle/Associate Degree and Technical/Vocational
		8	Honours Bachelor Degree, Higher Diploma	5 A BA/MA
7	Second Cycle	9	Masters Degree, Post-Graduate Diploma	
8	Third cycle	10	Doctoral Degree, Higher Doctorate	6

Don’t measure what you think

- Bibliometrics:
  - Main beneficiaries are physical, life and medical sciences because these disciplines publish frequently with multiple authors.
  - Assumption that journal quality is a proxy for article quality.
- Citations:
  - Journal impact factors are inadequate measures of research performance:
  - Reputational or halo factor implies that certain authors are more likely to be quoted than others;
- Reputation is susceptible to bias, self-perpetuating quality and gaming
  - ‘Overestimation may be related to good performance in the past, whereas underestimation may be a problem for new institutions without long traditions’ (Federkeil, 2009, 30)

Measuring Reputation?

- Rater bias? Halo effect? Reputational ranking? Self-referential or 'self-perpetuating quality'
- Susceptible to 'Gaming'
  - 'I know from a university in Bavaria the professors told the students to make the department actually better than it was…because they are afraid that universities which are better will get more money than others. So they were afraid of a cut of money...' (Interview with students in Germany, 01/08)
  - 'I filled it out more honestly this year than I did in the past…I [used to] check "don't know" for every college except [my own]…' (Finder, NY Times, 17/04/07)
  - 'removal of Kingston's psychology department data follows a recording which caught staff instructing students to falsify their approval ratings.' (BBC 25/07/08)

A Framework for Assessing Research

Indicator	Metric	Pro	Con
Research Publications and Outputs	e.g. Total number of peer publications	Measures & Improves Activity	Basis not always clear
Quality and Scholarly Impact	e.g. Citations; High Impact Publications	Measures & Improves Quality	Which journals? Most effective in English-language.
Human Capital	e.g. PhD completions; output/FTE or active researcher	Measures Timeliness of completion & Productivity	Differences between disciplines
Investment	e.g. Income & donations	Predictor of performance	Difficult to get valid comparable data
Economic and Social Benefit	e.g. Commercialised IP & employability	Link between R and D	Time-lag and context
End-User Esteem	e.g. Appointments to high level orgs.	Measures reputation	Time-lag and difficult to verify
Research Infrastructure	e.g. Library & research space	Measures capability	Difficult to get valid comparators

Better ways to assess the breadth of HE?

- Teaching/learning
- ‘Added value’
- Community engagement/regionalism
- Breadth and depth of research
- 3rd mission and innovation
- Social and economic impact

Summary

- Complex and imperfect system of comparative data on international higher education;
- National context resist attempts to make simple and easy comparisons;
- Lack of consistency in data collection, definition and reporting – even within borders – makes cross-national comparisons difficult;
- Choice of indicators and metrics is not value-free but depends on the purpose;
- Because indicators and metrics do influence and incentivise behaviour, the choice is critical;
- Despite complexity – a multi-dimensional framework can enable users to relate indicators/metrics to each other and to their purpose.

‘Not everything that counts can be counted, and not everything that can be counted counts.’

(Sign hanging in Einstein's office at Princeton)

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ellen.hazelkorn@dit.ie
http://www.oecd.org/edu/imhe/rankings