

Data Benchmarking as a Strategic Tool to Manage Internationalization

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Agenda

Time	Subject	Learning objectives	Training methods	Presenters & Times
10:00–10:20	Setting the Scene	Introduction participants & presenters, programme & objectives / expectations		All 20 min
10:20 –11:15	1. Benchmarking 101 2. Institutional culture and context 3. The Inconvenient Truth	What do we mean by Benchmarking? How to develop an institutional culture that allows benchmarking?	Presentation, group work & discussions	Mathias Falkenstein 25 min presentation 15 min Group Work 15 min presentation and discussion Total = 55 min
11:15–11:30	Coffee Break			
11:30 – 12:45	1. The power of clean data 2. Peers & Competitors	How and where to get access to reliable data? How to define your institutional peers and competitors?	Presentation, group work & discussions	Wilfred Mijnhardt 45 min presentation 15 min Group Work 15 min presentation and discussion Total = 75 min
12:45–13:00	Wrap up			All 15 min

Self introductions

I am *(name)* from *(institution & role)* in *(country)*
and I am interested in benchmarking because ...

First Name	Last Name	Title	Institution	Country
Guénola	Abord-Hugon Nonet	University Sustainability Leader, Researcher & Professor	Jönköping University	Sweden
Sara	Aguilar-Barrientos	Academic Coordinator. International Business Undergraduate Program	Universidad EAFIT	Colombia
Bijan	Azad	Director, Darwazah Center for Innovation Management and Entrepreneurship	American University of Beirut, Suliman S. Olayan School of Business	Lebanon
Justin Xavier	Batinadan	Senior School Manager	Monash University Malaysia	Malaysia
Kate	Beach	Director of Global Engagement	Darden School of Business, University of Virginia	USA
Hamid	Bouchikhi	Dean	SolBridge International School of Business	South Korea
Pedro	Brito	Associate Dean for Executive Education	Nova School of Business and Economics	Portugal
Antoine	Cauchon	Deputy Director	Missions commerciales de l'Université Laval	Canada
Azam	Chaudhry	Dean	Lahore School of Economics	Pakistan
Kristeen	Daly	Accreditations, Rankings and Communications Manager	University of Glasgow	United Kingdom
Katarzyna	Fonseca	Head of International Programs	Nova School of Business and Economics	Portugal
Violetta	Grigorieva	International Partnerships & Faculty Relations Director	Moscow School of Management Skolkovo	Russia
Longzhen	Han	Assistant Director	MIT Sloan School of Management	USA
Jane	Hendy	Professor - Head of School	Brunel University London	United Kingdom
Angus	Laing	Dean	Lancaster University Management School	United Kingdom
Yuri	Martens	Strategic Partnership Manager	Studyportals	The Netherlands
Andre	Menezes	Guest Professor	Fundação Dom Cabral	Brazil
Amanda	Michael	Faculty Finance Manager	Monash Business School	Austria
Hilda	Mogire	Associate Dean, Academic and Student Affairs	Strathmore University Business School	Kenya
Sally	Morshed	Senior Officer	The American University in Cairo	Egypt
Marta	Pimentel	Director	Nova School of Business and Economics	Portugal
Sophanna	Prom	Vice Rector	National University of Management	Cambodia
Kusdhianto	Setiawan	Vice Dean for Finance, Asset, and HR	Faculty of Economics and Business Universitas Gadjah Mada	Indonesia
Janette	Shearer	Accreditation Officer	University of Glasgow	United Kingdom
Bernhardus	van Hoof	Associate Professor	Universidad de los Andes	Colombia
Simon	Wilkie	Dean, Faculty of Business & Economics	Monash University Business School	Australia
Andreas	Wittmer	Head of International Networks	University of St. Gallen	Switzerland

Guiding Questions for this Workshop

1. Do you have to make decisions that affects units or the entire organization?
2. Will some of your decisions bring significant changes in your organization, be hard to revers and require a significant commitment of resources?
3. Do your decisions often entail a high level of uncertainty and often lack data and evidence?



Benchmarking 101

Institutional Culture and Context

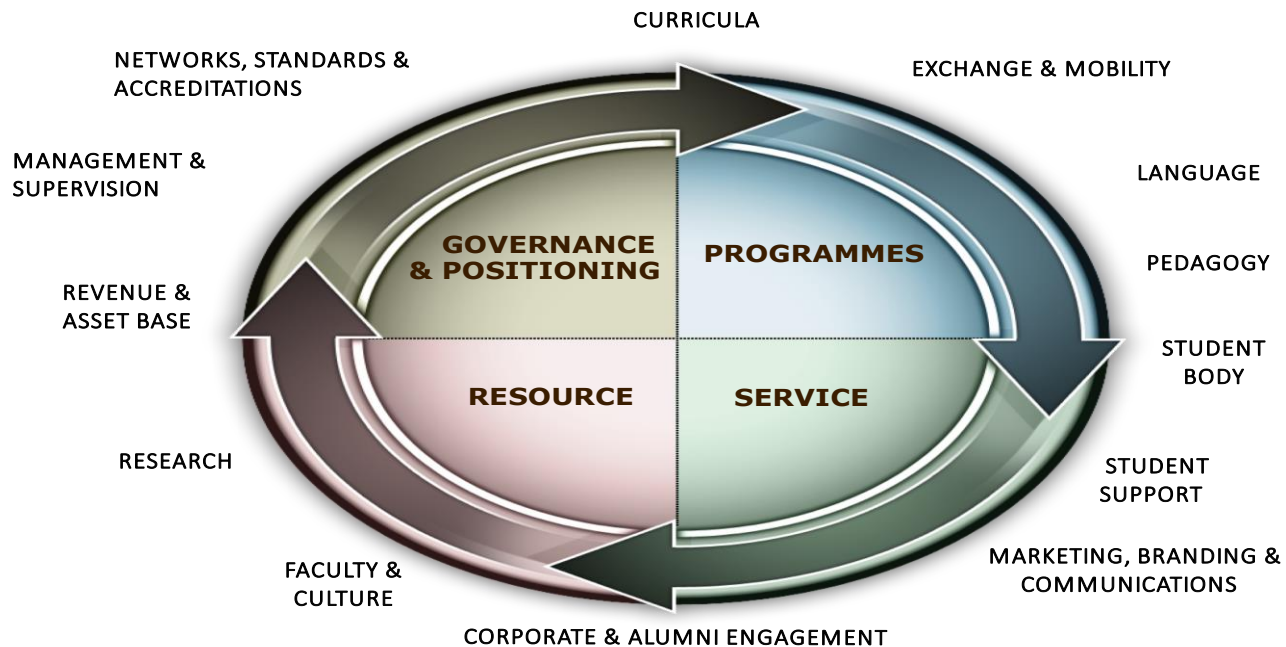
Mathias Falkenstein

Initial Challenges for Benchmarking

1. What are relevant **benchmarking areas**?
2. How to define national and international **peers & competitors**?
3. How to create an **institutional culture** that allows benchmarking?
4. How to get **access** to relevant and trustworthy data?

Multiple Benchmarking Dimensions in Internationalisation

Multiple Benchmarking Dimensions



Where does the term come from?



The term benchmarking was first used by cobblers to measure people's feet to produce shoes. They would place someone's foot on a "bench" and mark it out to make the pattern for the shoes.

We all do it



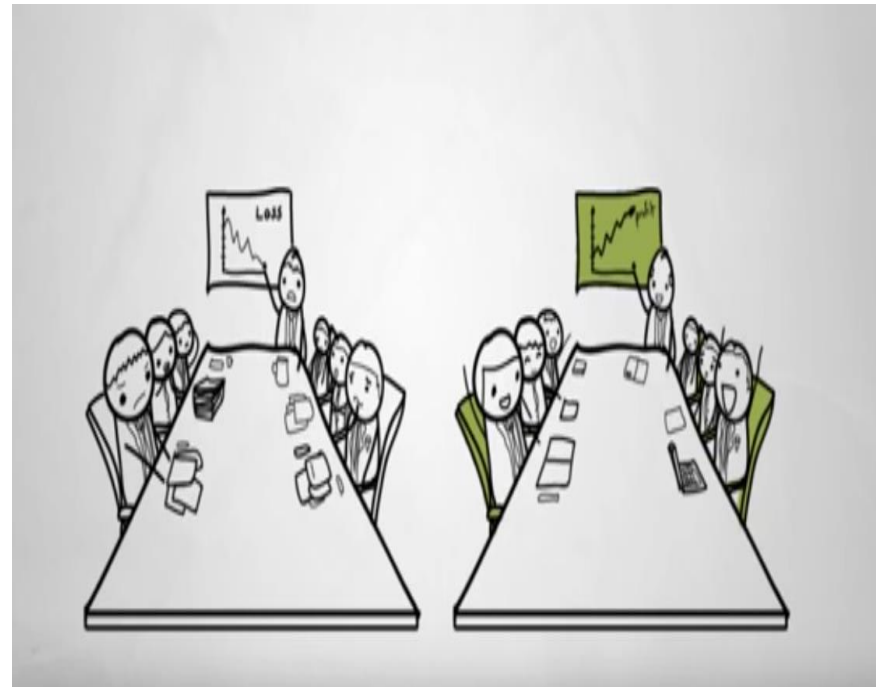
Benchmarking tells us our position or status in comparison to others.

The questions we ask

- Where am I today?
- How do I compare to others?
- Am I at the top or the bottom of the class?
- What are the areas I need to improve?
- Are there others with similar problems?
- Have they solved them already, and if so what worked?

Collaborative benchmarking???

- is a **process** undertaken with the aim of **improving performance** by **learning** from others
- is a **voluntary** process of **self-evaluation**
- entails **systematic** and **collaborative** comparison of practices with the purpose of implementing **change** in order to **improve**



A simple but not straightforward process

1. requires **time, commitment and investment**
2. is not only a **technical exercise**, but one of **social and cultural engagement**
3. factors pushing a change of **culture and improvement**
4. potentially, this can be **threatening**

Why do we do it?

Benchmarking is a **powerful tool** to:

- gain **deeper understanding** of institutional strengths and weaknesses
- provide **systematic comparison** of core institutional processes by placing institutional performance in **context**
- **inform strategic planning** and assist with decision-making in an increasingly competitive environment
 - setting realistic **objectives** and targets
 - building **ownership** of results at different levels
- which should lead to **innovative practice** and **improved organisational performance**



How do we do it?

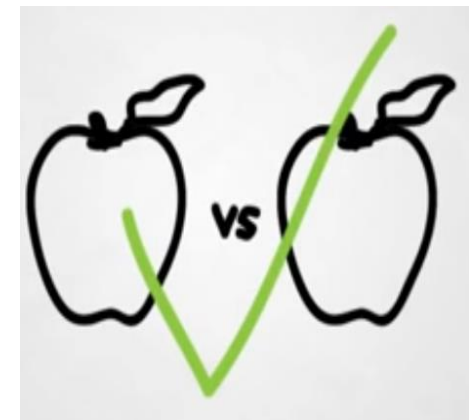
We need appropriate comparators

- similar institutional profile (**private vs. public / free standing vs. university embedded**)
- **similar degree of institutional development (size, age, programme portfolio)**
- sufficient **common strategic interest (teaching, research, consultancy....)**
 - Or with a leader in the field?
 - Or within/across the institution?

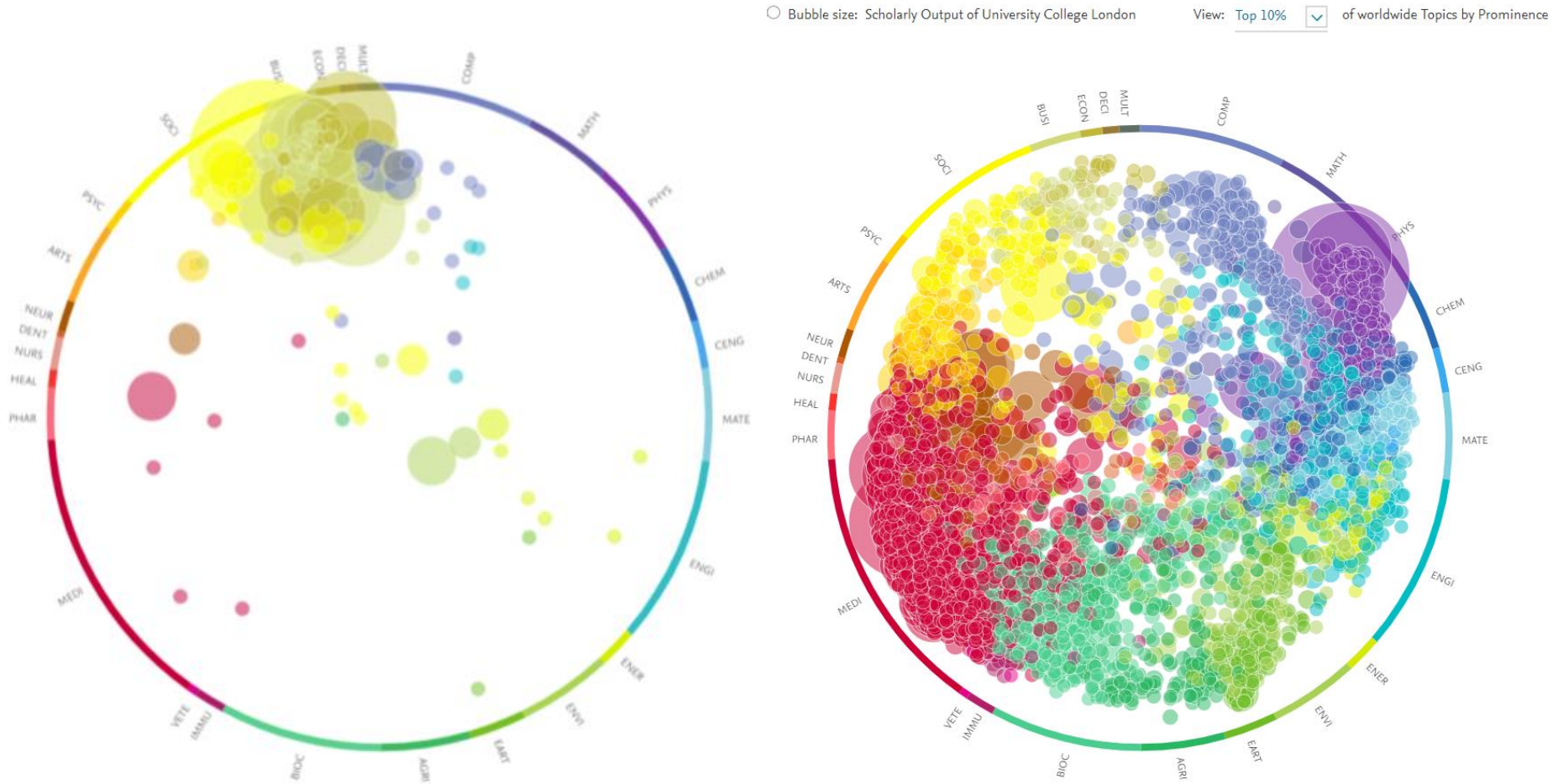
What do we do?

You need to be sure your comparisons are comparable

- agreeing on priority thematic areas
- developing a list of indicators (quantitative and qualitative)
- developing “**benchmarks**”



Apple vs. Oranges: Research Outputs



We need to gather and analyse reliable data

- **defining how the data will be gathered**
 - issue of quality and comparability of data
- **validating the data**
 - internally
 - with partners
 - using external experts
- **scoring the institution**
 - placing the institution against the benchmarks
- **analysing and producing a report**
 - confidential for management or shared?
 - what information is made public ?

Benchmarking Data Sources (public)

Policy Organisations

- European Tertiary Education Register (ETER)
- Organisation for Economic Co-operation and Development (OECD)

Rankings

- Times Higher Ed
- Shanghai
- U-Multirank
- Financial Times
- QS
- CWTS Leiden

Accreditations

- National / International
- Reports
- Databases

Science

- Scopus database
- World of Science
- CABS Academic Journal Guide

In conclusion...

Benchmarking (like strategic planning)

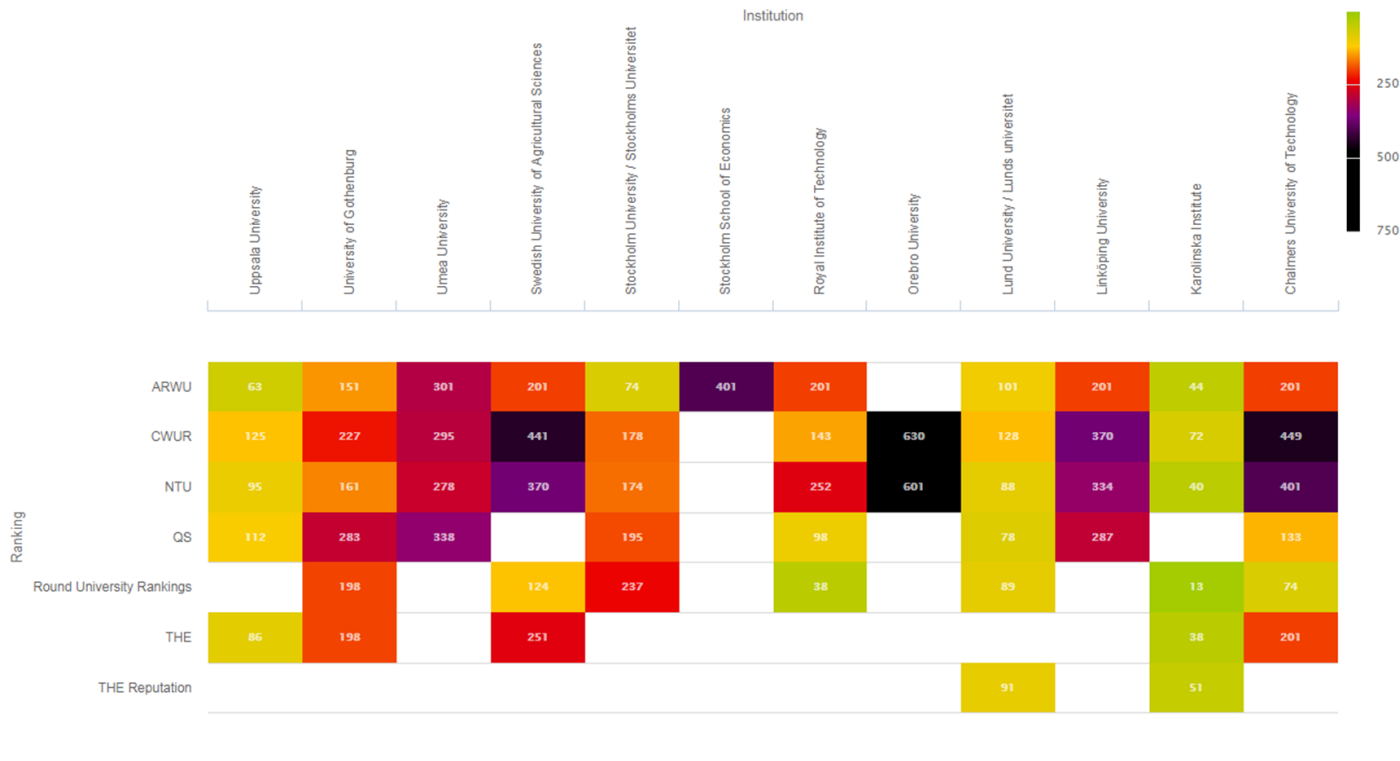
- is about **positioning** (regional, national, international)
- is designed to **strengthen and enhance** the performance and quality of an institution
- is **participative, dynamic** and **future focused**
- results in **decisions and actions**
- is fundamentally a **change process**



Benchmarking: The Inconvenient Truth

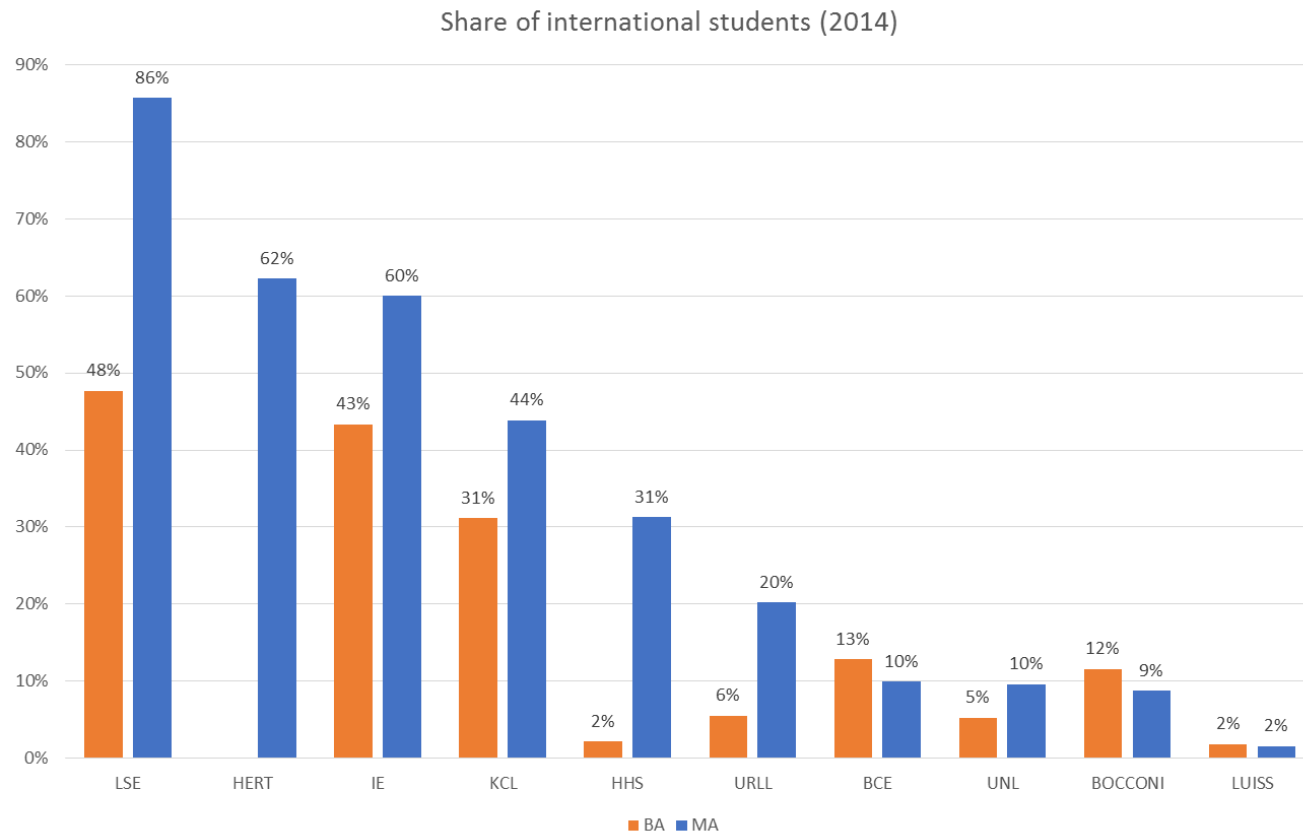
Rankings

Current rank of national institutions (Sweden) in 2017



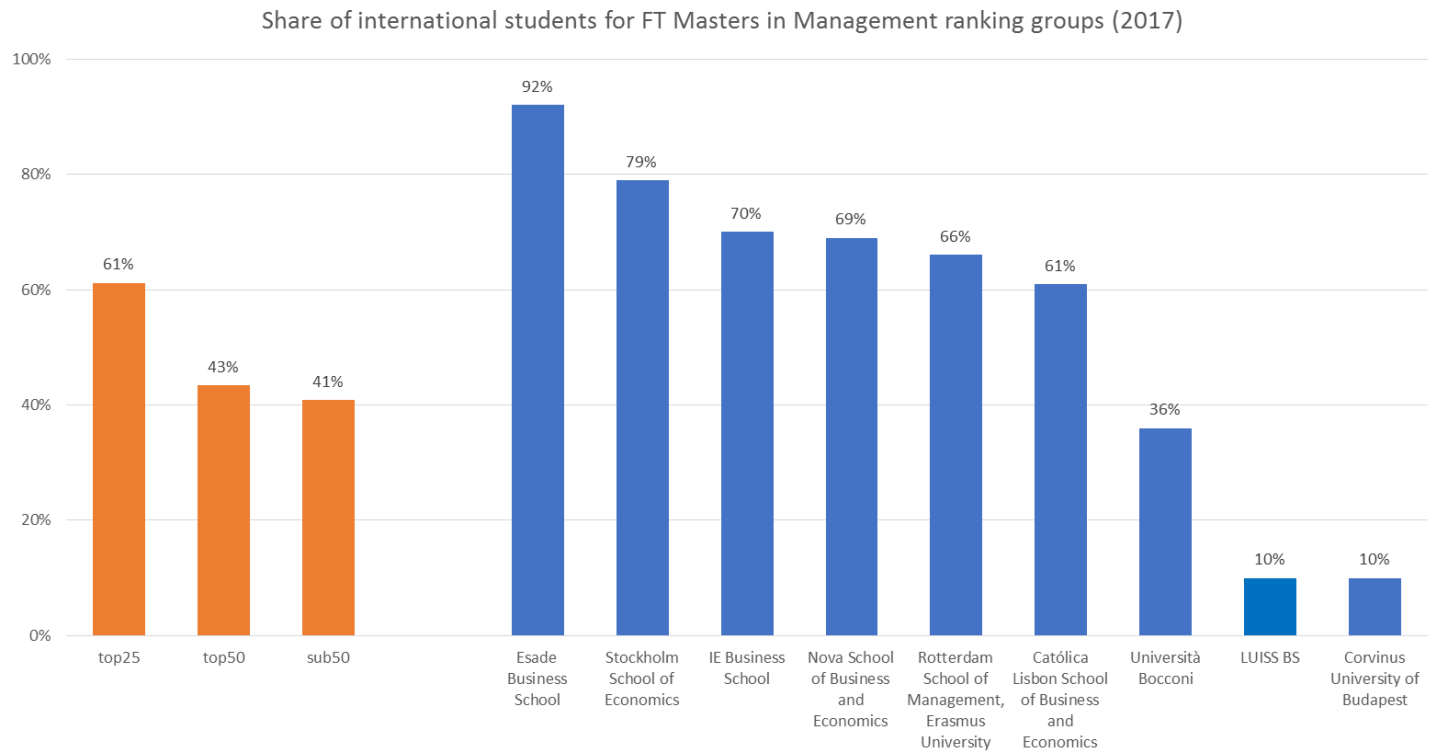
Erasmus University Rotterdam / Dialogic

Share of International Students



Source: ETER & OECD

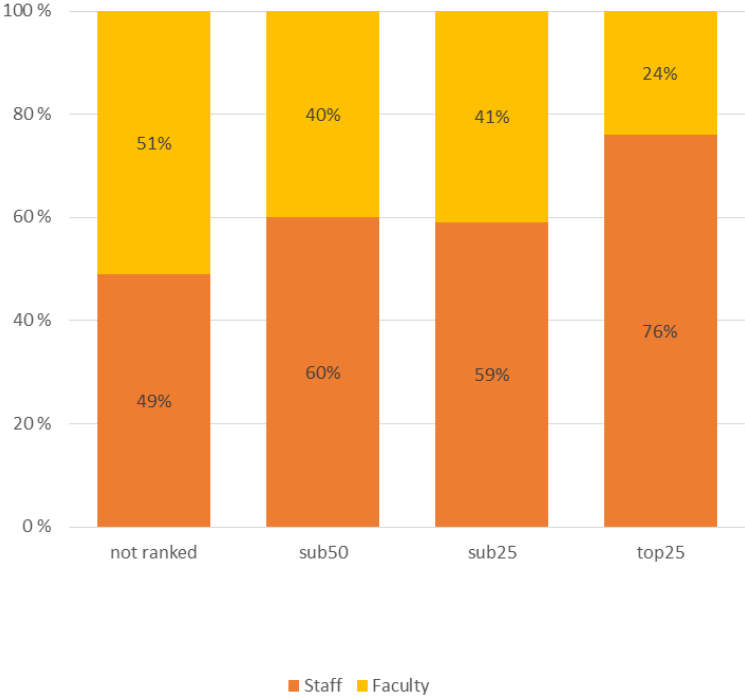
Share of International Students for Masters in Management



Source: FT Masters in Management Ranking 2017

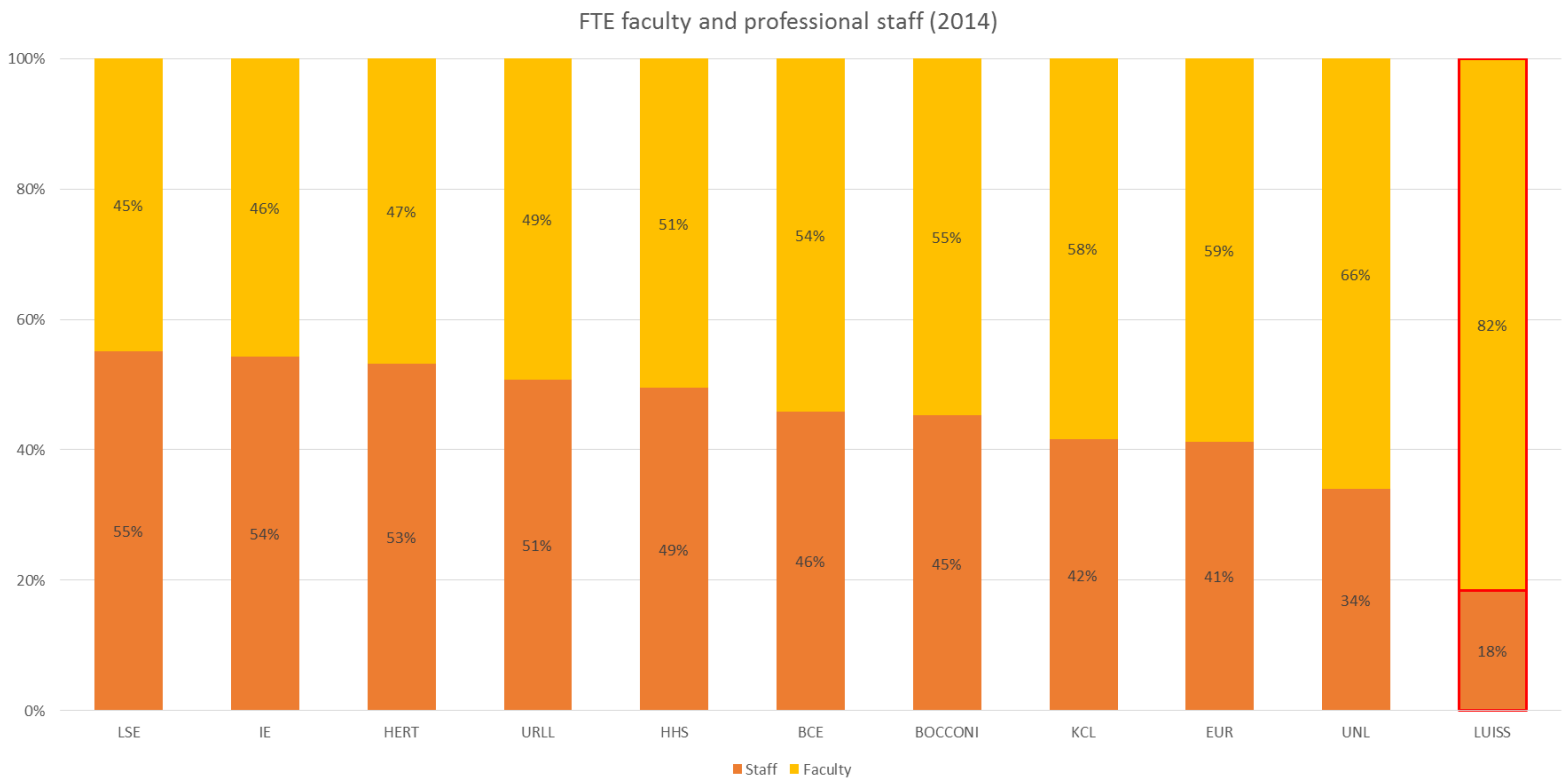
Faculty to Professional Staff Ratio

FTE faculty & professional staff compared for FT Ranking groups, AACSB business schools (2014-16)



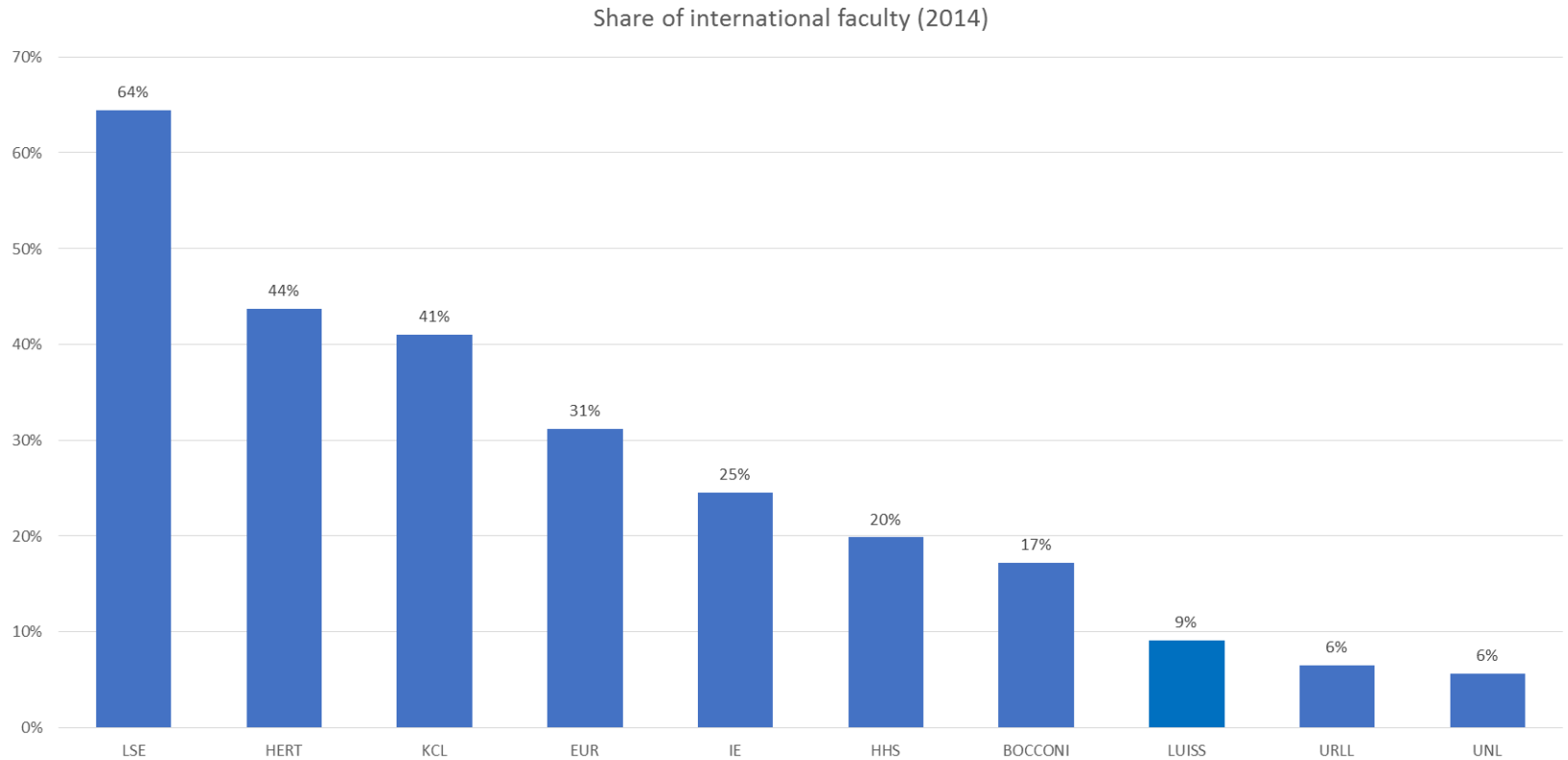
Source: AACSB Data Direct data and Financial Times MBA Rankings

Faculty to Professional Staff Ratio by Institution



Source: AACSB Data Direct data and Financial Times MBA Rankings

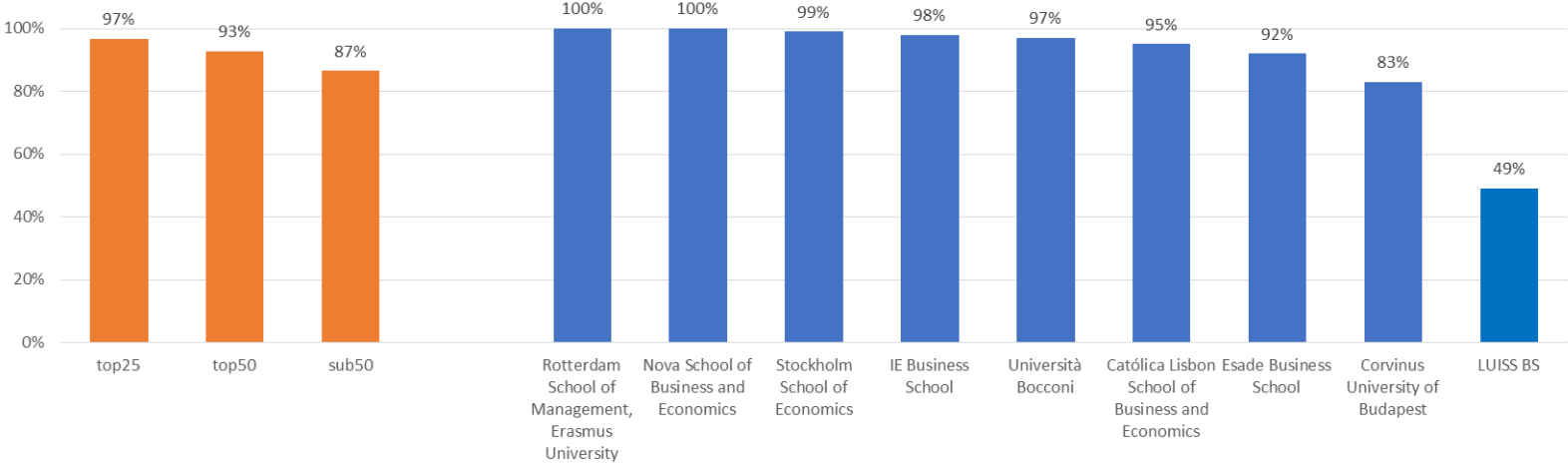
Share of International Faculty by Institution



Source: ETER

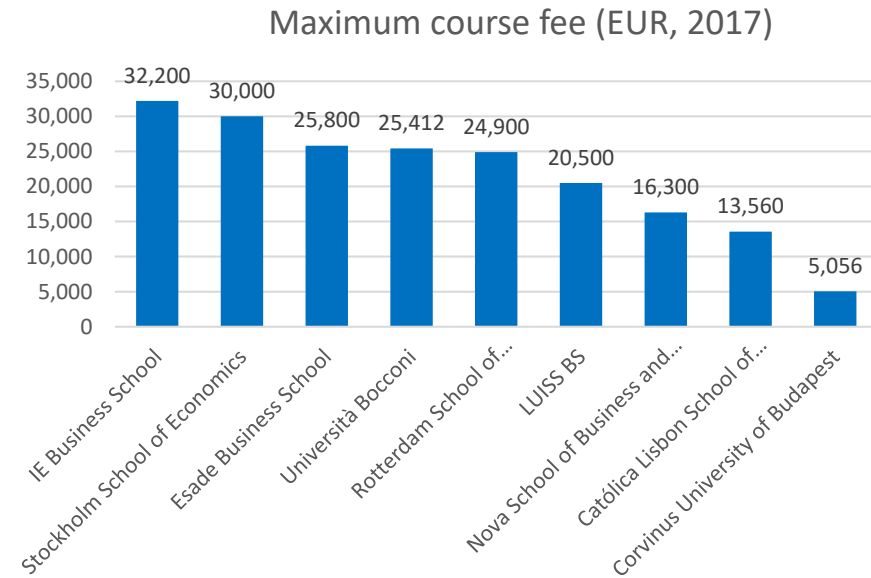
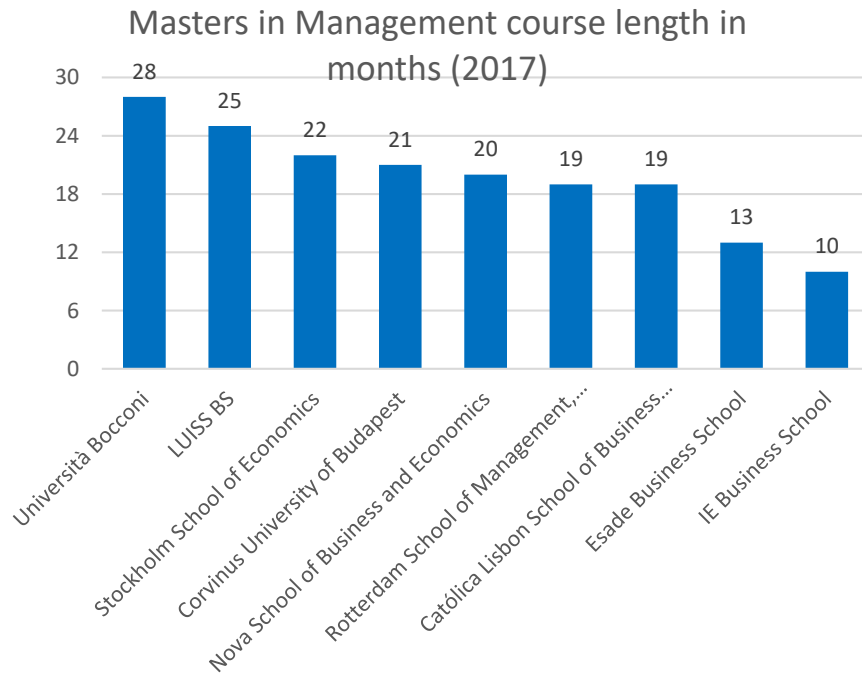
Faculty with Doctorates

Share of faculty with doctorates for FT Masters in Management ranking groups (2017)



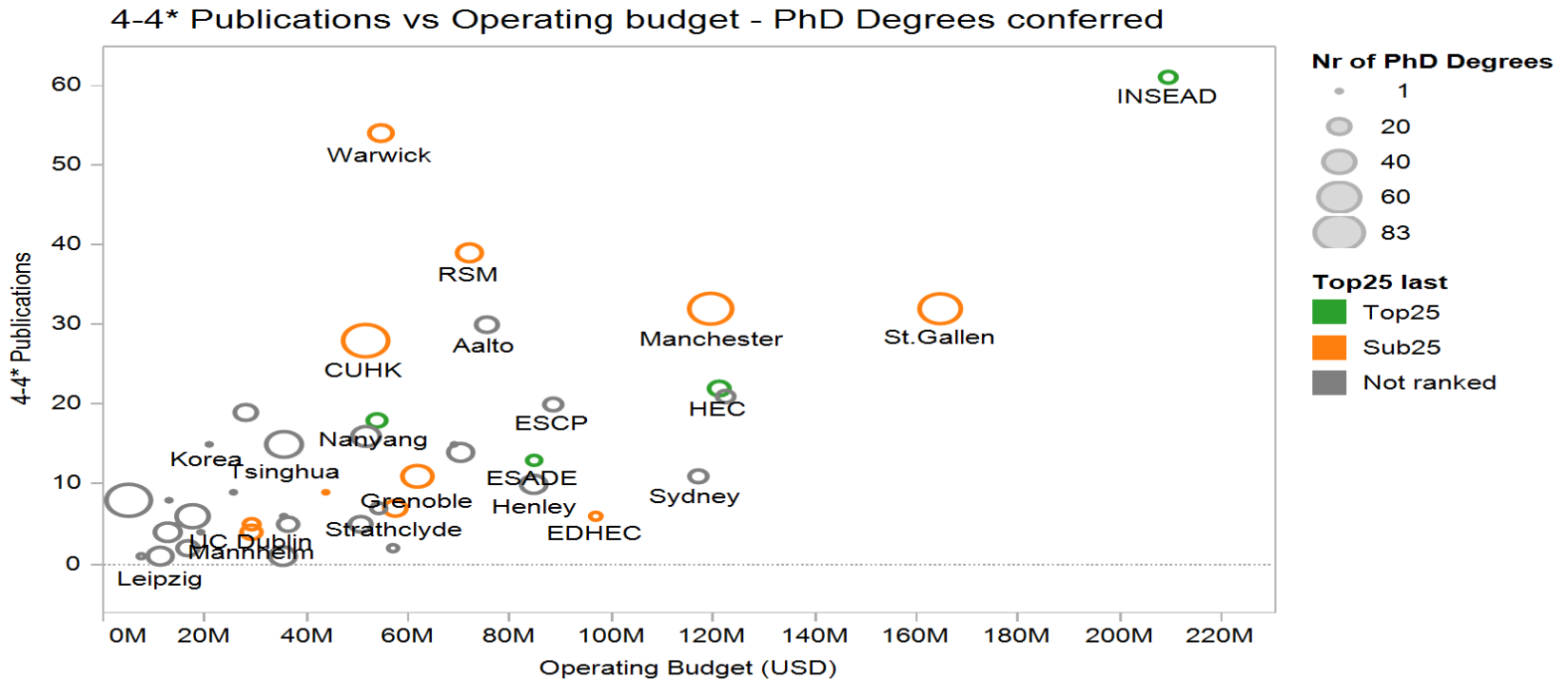
Source: FT Masters in Management Ranking 2017

Masters in Management Course Length vs. Course Fee



Source: FT Masters in Management Ranking 2017

Combining multiple dimensions: 4-4*Publications 2015-16 vs. Operating Budget (USD) vs. Number of PhD Degrees vs ranking positions



Number of 4 and 4* Publications published in academic year 2015-16 versus the Operating Budget (USD) in the same year. Number of PhD Degrees conferred are reflected in the size of the circles. Ranking position in the Global MBA.

Source: CABS Academic Journal Guide 2015 – 4 & 4* Journals, AACSB Data Direct school data and Financial Times MBA Rankings

Exercise 1: Group Work: Questions

1. What are relevant benchmarking areas in internationalisation for your institution? How do you define those areas?
2. What are potential drivers and barriers for benchmarking in your institution?
3. What kind of institutional culture needs to be in place to use external benchmarking processes for strategic planning? Is this kind of culture in place in your institution?

New perspectives for benchmarking internationalisation

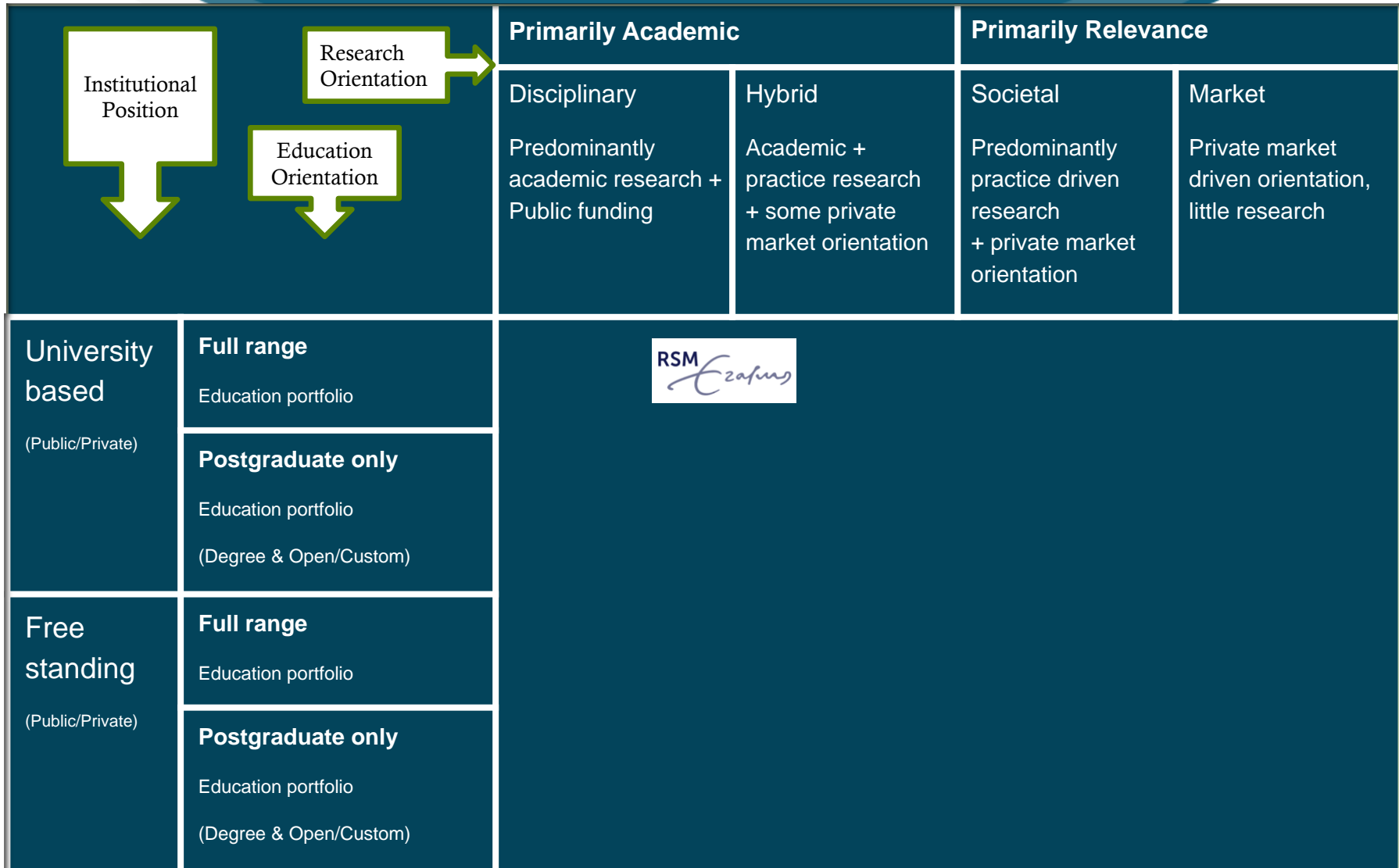
Wilfred Mijnhardt

3 examples of bigger perspectives

1. Trends in variables (“emergence over time” benchmark, 1 ranking)
2. Clustering analysis (multiple rankings together)
3. SDG Impact on FT ranking via Neural Network analysis (publications & AI based)

Finding Peers & Competitors: Mind the context

Diversity in business school models based on orientation and ownership





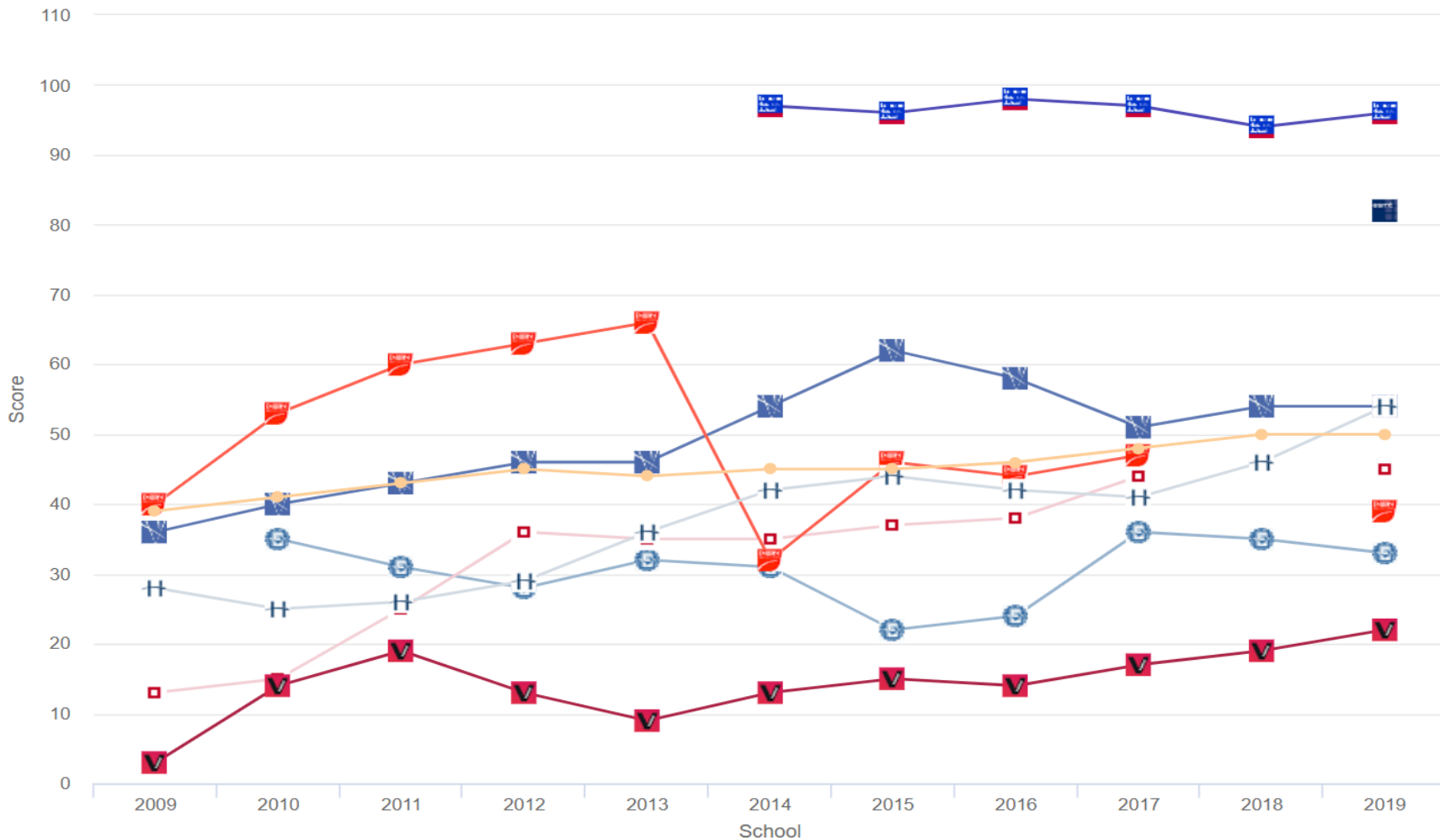
1

Trend analysis

(Free standing vs
University based
Full Service schools
in top 30)

Example trend approach: Variable: % international **students** (reported in MIM)
 Freestanding European schools in top 30,
 Full service schools, min 4 programmes ranked by FT, euro average, 2009-2019

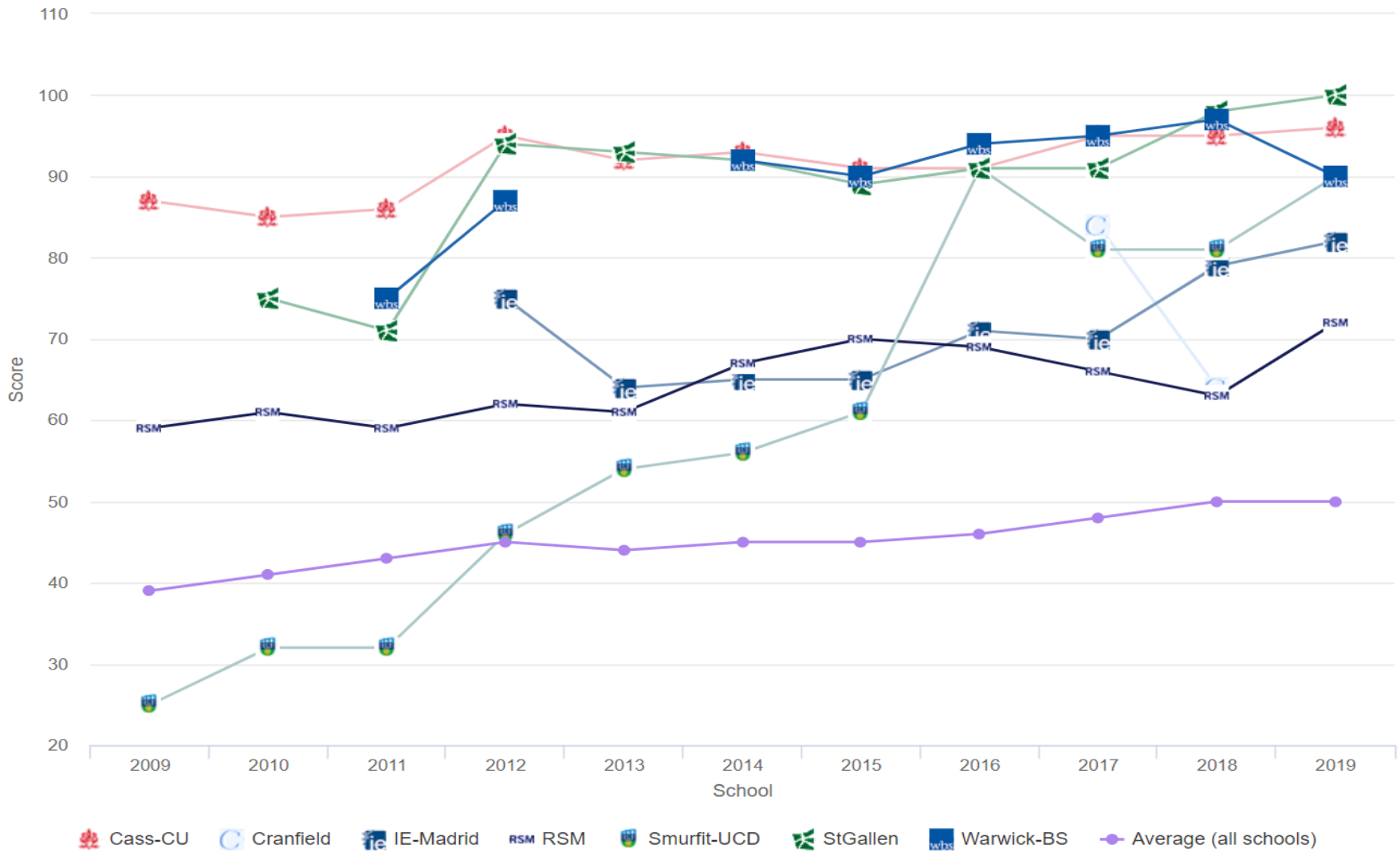
Compare HEC-Paris,LBS,Bocconi,ESMT,EDHEC,Vlerick,CBS,EM Lyonfor variable: International students (%) in FT - Masters in Management and Group:



Bocconi
 CBS
 EDHEC
 EM Lyon
 ESMT
 HEC-Paris
 LBS
 Vlerick
 Average (all schools)

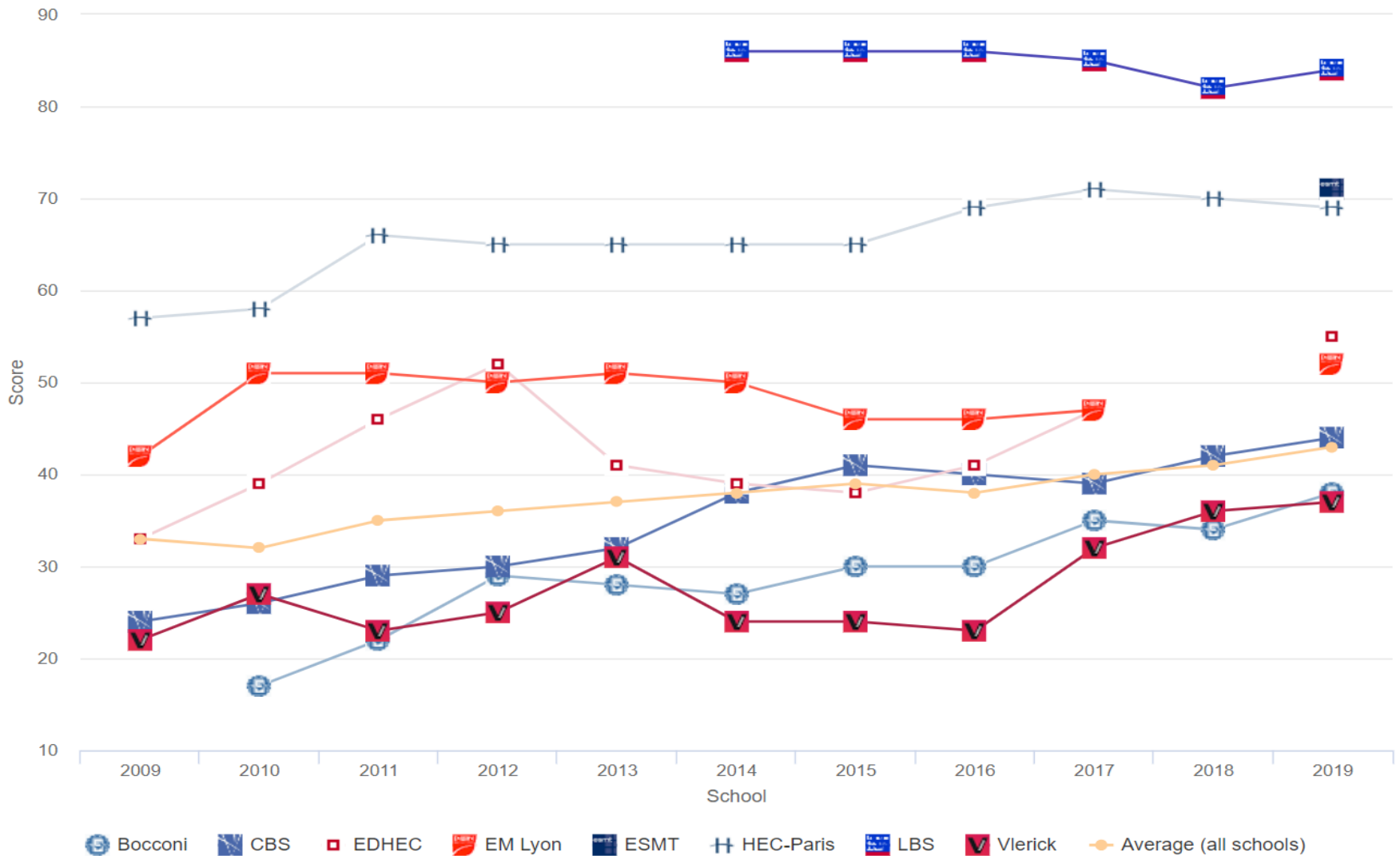
Example trend approach: Variable: % international **students** (reported in MIM)
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Compare RSM,IE-Madrid,Warwick-BS,StGallen,Cass-CU,Smurfit-UCD,Cranfieldfor variable: International students (%) in FT - Masters in Management and Group:



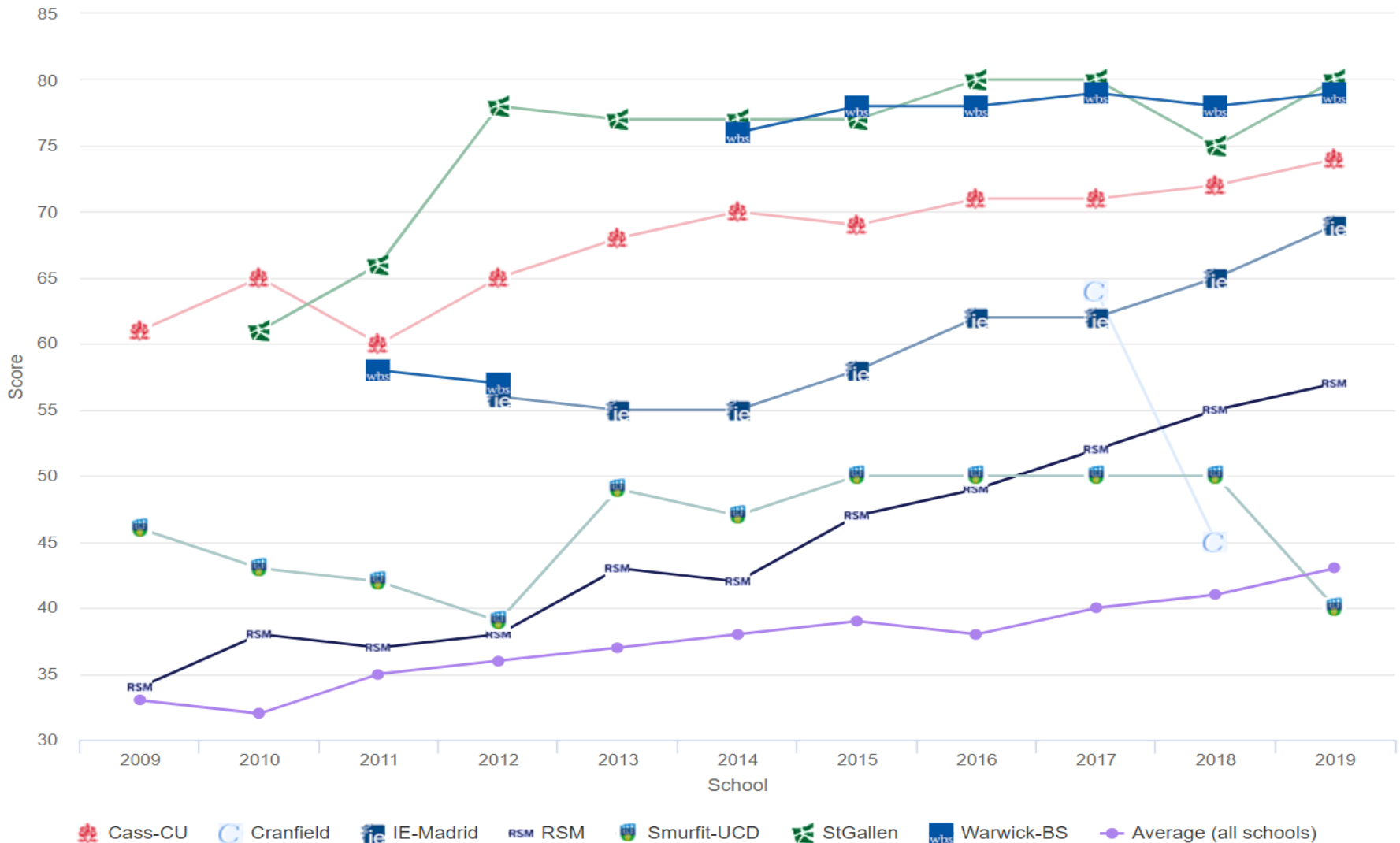
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Compare RSM,IE-Madrid,Warwick-BS,StGallen,Cass-CU,Smurfit-UCD,Cranfield for variable: International faculty (%) in FT - Masters in Management and Group:





1b

Trend analysis

Special case:

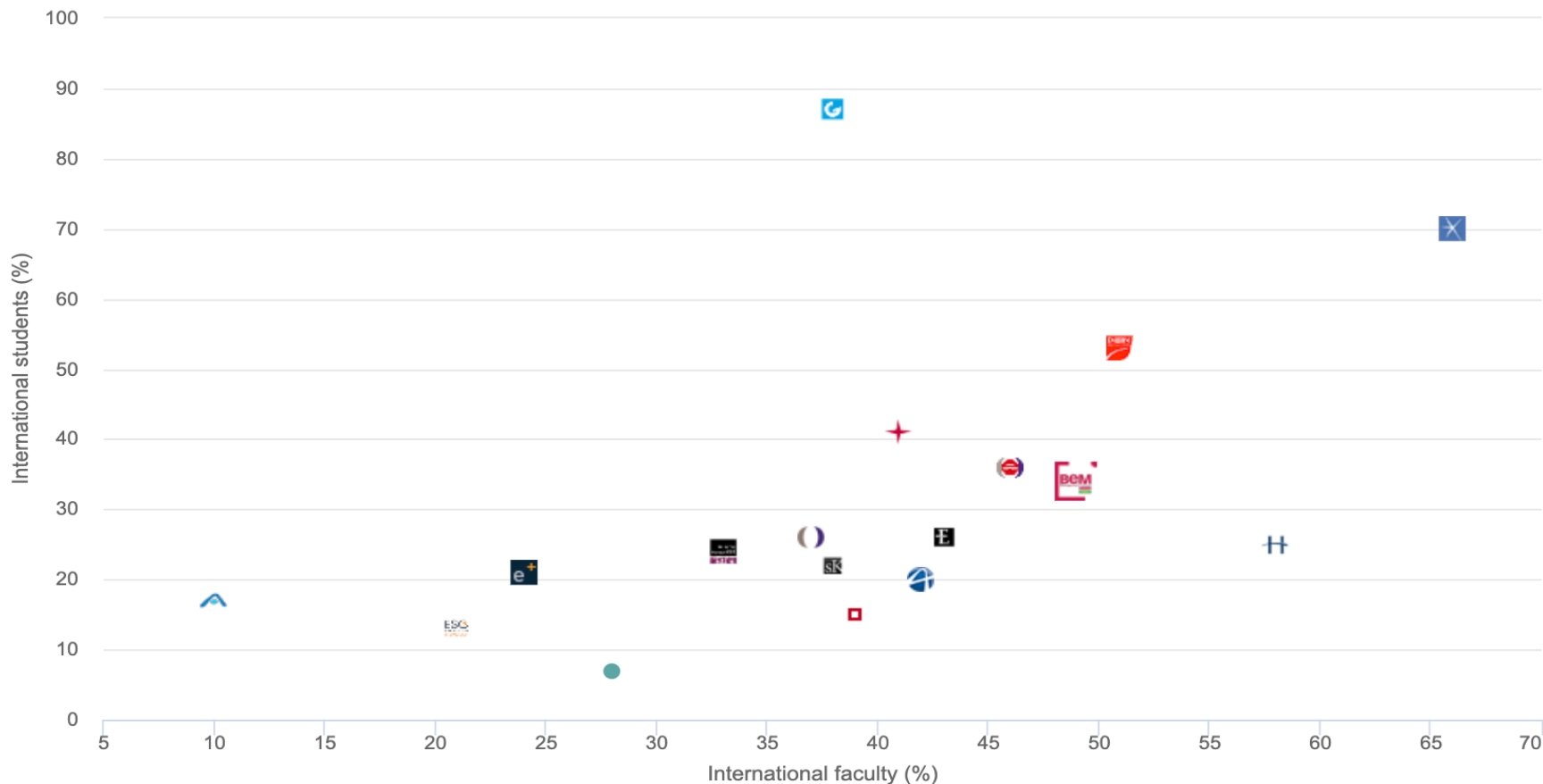
French schools

2010 vs 2019

Example Relate variables: FT MIM

% international Students vs % international Faculty, French Schools, 2010

Compare variables 'International faculty (%)' & 'International students (%)' for ranking 'FT - Masters in Management' and year 2010.

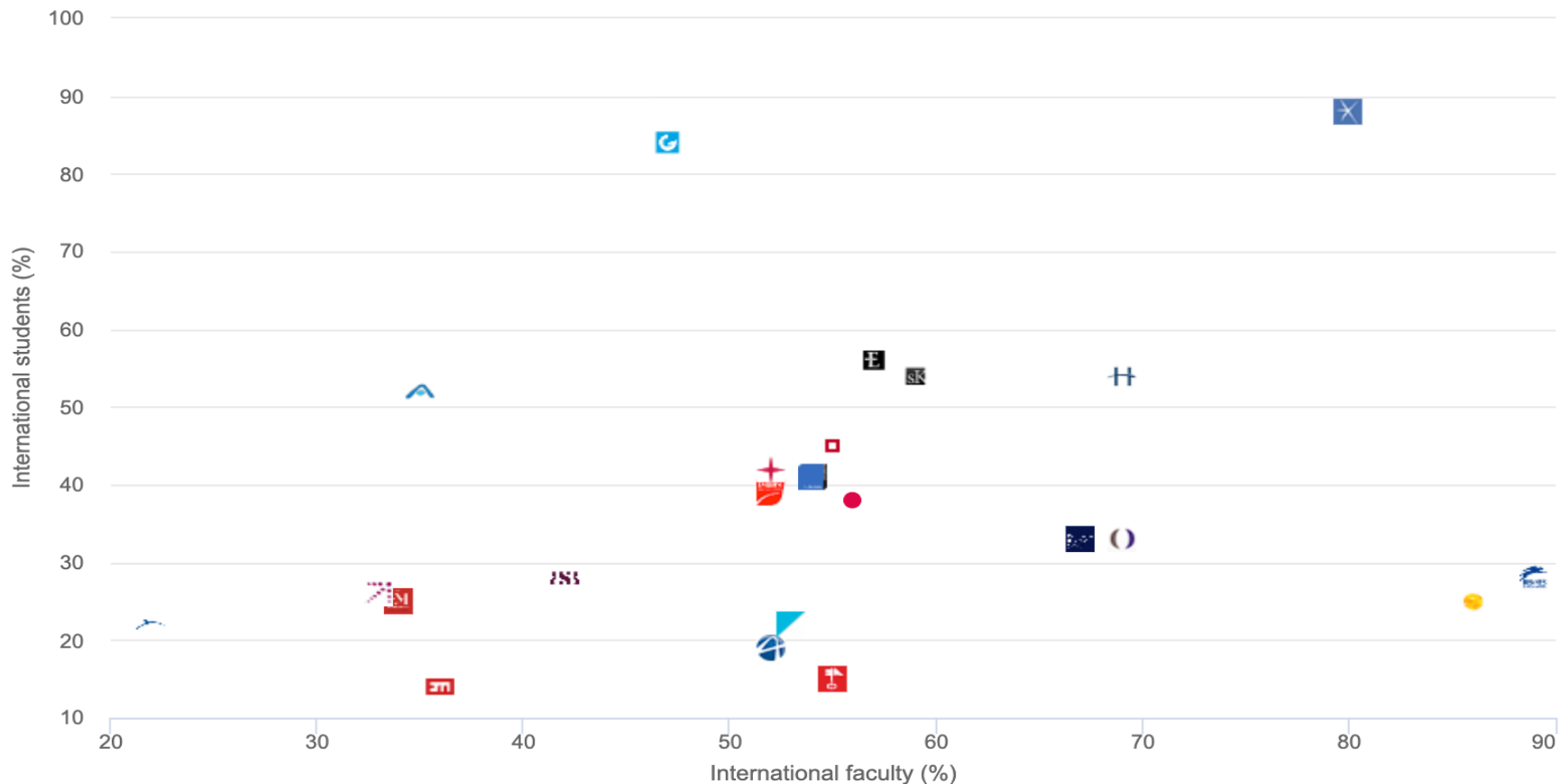


- AIXProvMars-AMU
- AudenciaNantes
- BEMBordxMS
- EDHEC
- EM Grenoble
- EM Lyon
- ESC Clermont
- ESCP
- ESCToursPoits
- ESSEC
- Euromed
- HEC-Paris
- ICN Nancy
- Reims
- RouenBS
- Skema
- TBS Toulouse

Example Relate variables: FT MIM

% international Students vs % international Faculty, French Schools, 2019

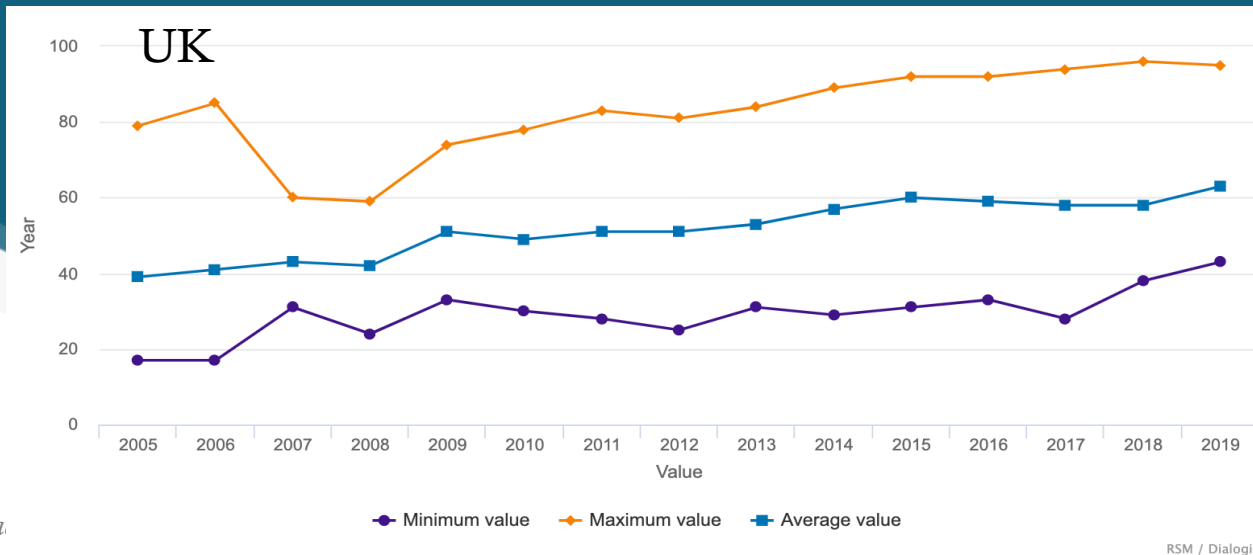
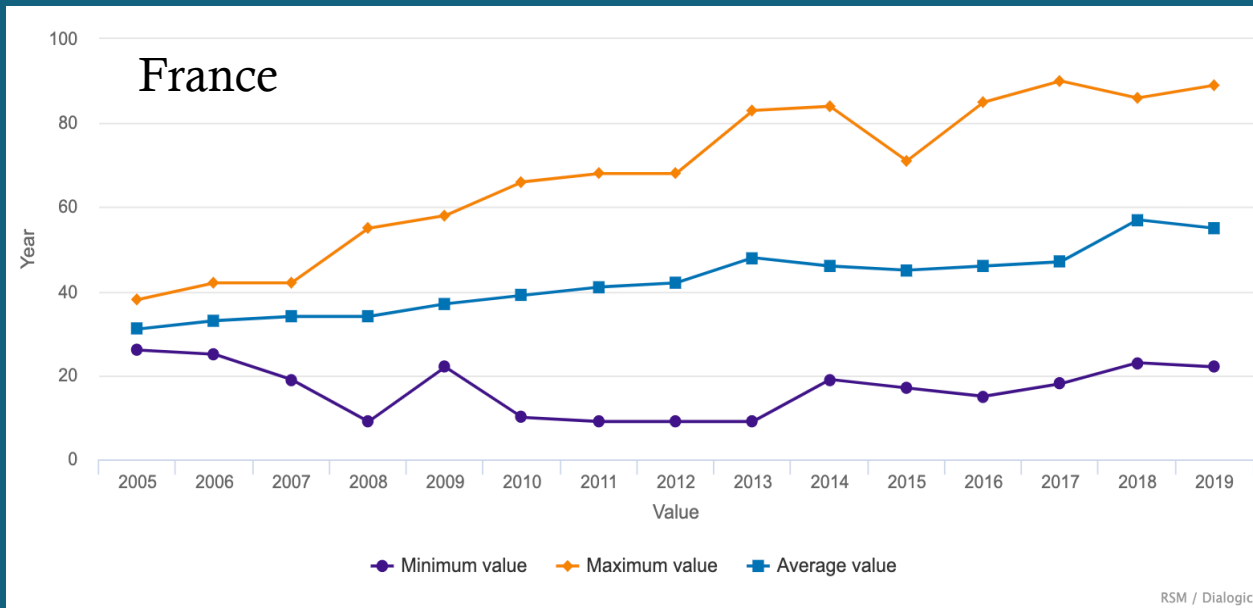
Compare variables 'International faculty (%)' & 'International students (%)' for ranking 'FT - Masters in Management' and year 2019.



- AIXProvMars-AMU
- AudenciaNantes
- EDHEC
- EM Grenoble
- EM Lyon
- EM Normandie
- EM Strasbourg
- ESC Dijon
- ESC Montpellier
- ESC Rennes
- ESCP
- ESSECC
- ESSCA
- HEC-Paris
- ICN Nancy
- IESEG
- ISC Paris
- Kedge
- La Rochelle BS
- Neoma
- Paris Dauphine
- Skema
- Telecom

Example Relate countries: FT MIM

Max, Min & Average % international Faculty, French vs UK Schools, 2005-2019



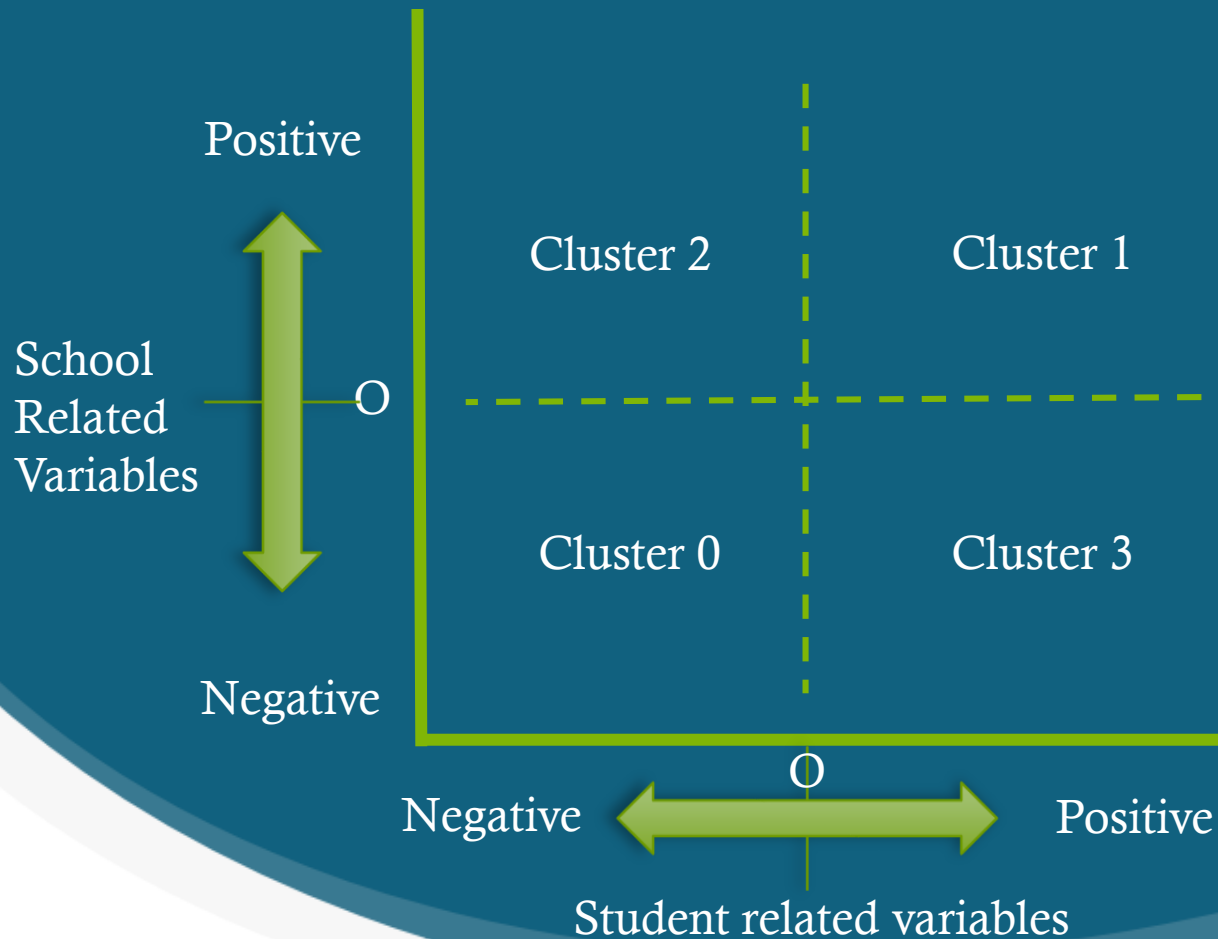


2

Clustering analysis

(using a
K-Means
algorithm)

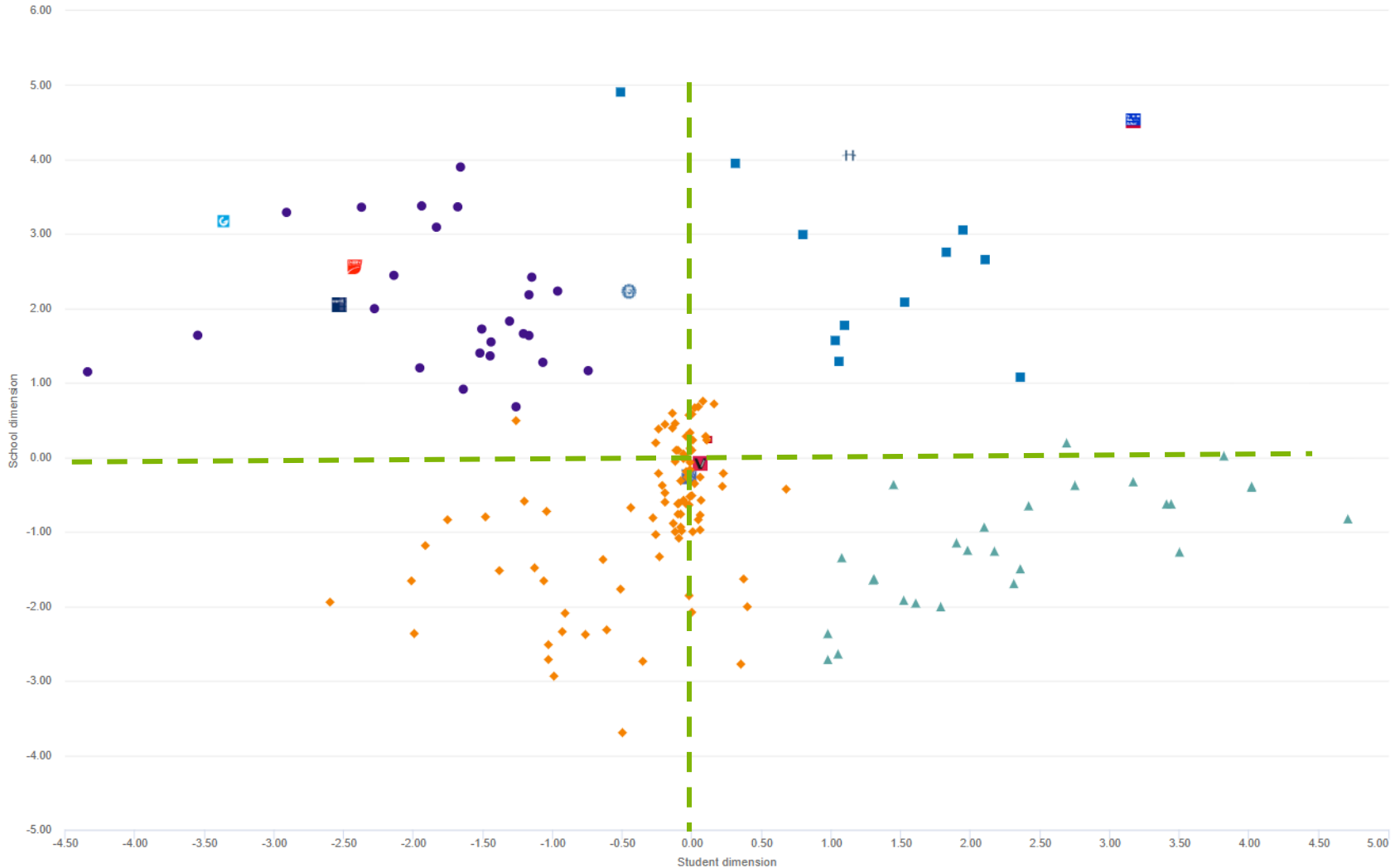
Example FT MIM & FT Global MBA,
All variables, K-means analysis 2019,
2 dimensions: School related variables vs student related variables



https://en.wikipedia.org/wiki/K-means_clustering#/media/File:K-means_convergence.gif

Example FT MIM & FT Global MBA: All variables, 2019, Free standing schools, Europe, top 30

Clusteranalysis based on FT Global MBA and Masters in Management rankings (Benchmarked with Current rank from ranking FT - Masters in Management in year 2019)



- Bocconi (Cluster - 2)
- CBS (Cluster - 0)
- EDHEC (Cluster - 0)
- EM Grenoble (Cluster - 2)
- EM Lyon (Cluster - 2)
- ESMT (Cluster - 2)
- HEC-Paris (Cluster - 1)
- LBS (Cluster - 1)
- Vlerick (Cluster - 0)
- (Cluster - 2)
- (Cluster - 0)
- (Cluster - 1)
- (Cluster - 3)

Example FT MIM: All variables, 2019, Free standing schools, Europe, top 30, cluster 1 (positive/positive)

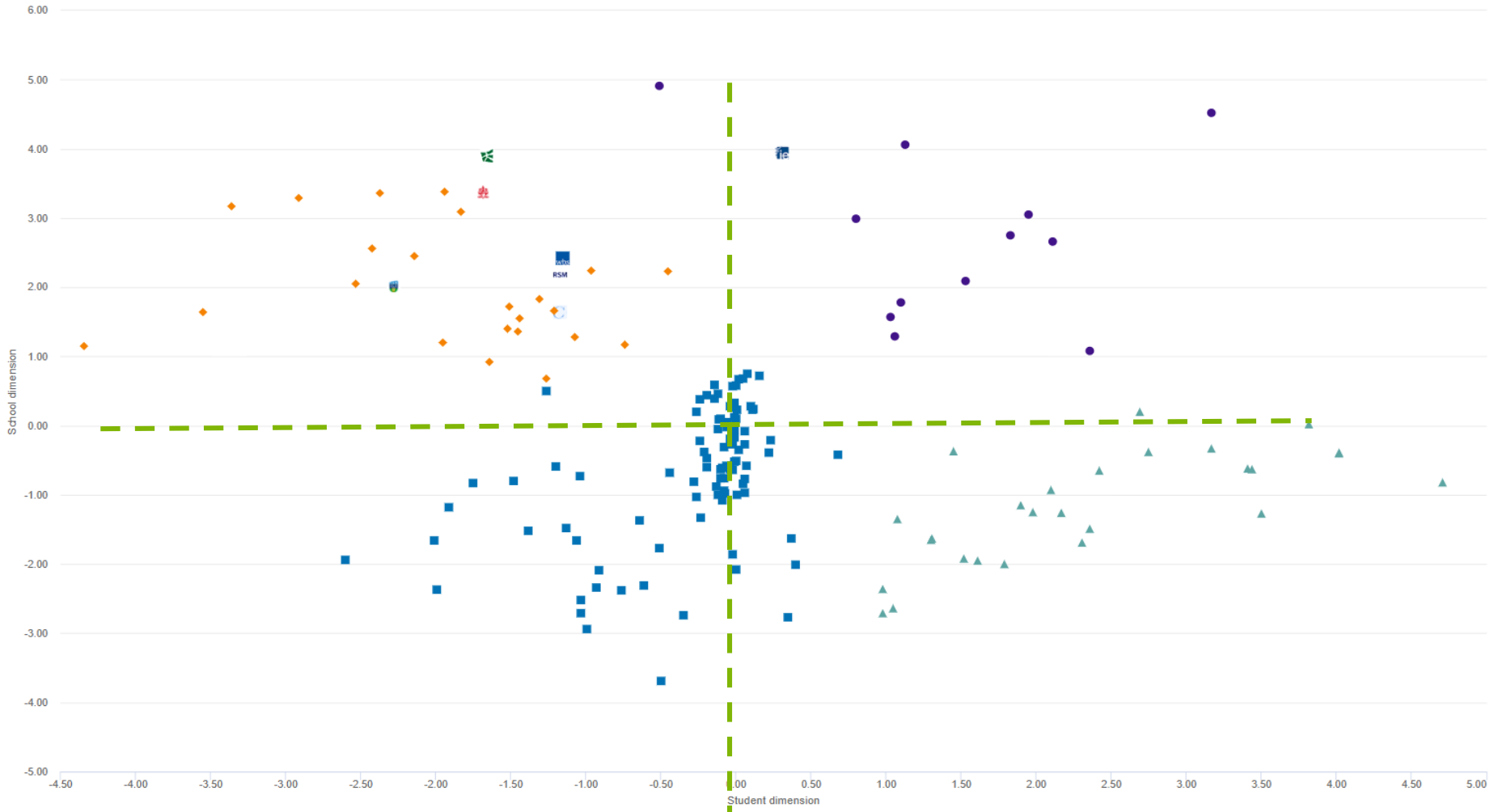
Clusteranalysis based on FT Global MBA and Masters in Management rankings (Benchmarked with Current rank from ranking FT - Masters in Management in year 2019)



- | | | | | | | |
|------------------------|-----------------------|---------------------|---------------------------|-----------------------|-------------------------|-------------------------|
| Bocconi (Cluster - 2) | CBS (Cluster - 0) | EDHEC (Cluster - 0) | EM Grenoble (Cluster - 2) | EM Lyon (Cluster - 2) | ESMT (Cluster - 2) | HEC-Paris (Cluster - 1) |
| LBS (Cluster - 1) | Vlerick (Cluster - 0) | IEU (Cluster - 2) | IESE (Cluster - 1) | ESADE (Cluster - 1) | ImpCollBS (Cluster - 1) | IE-Madrid (Cluster - 1) |
| NUSbs (Cluster - 1) | HKUST (Cluster - 1) | CEIBS (Cluster - 1) | IMD (Cluster - 1) | INSEAD (Cluster - 1) | Judge-UoC (Cluster - 1) | |
| SAID-UoO (Cluster - 1) | | | | | | |

Example FT MIM & FT Global MBA: All variables, 2019, University based schools, Europe, top 30

Clusteranalysis based on FT Global MBA and Masters in Management rankings (Benchmarked with Current rank from ranking FT - Masters in Management in year 2019)

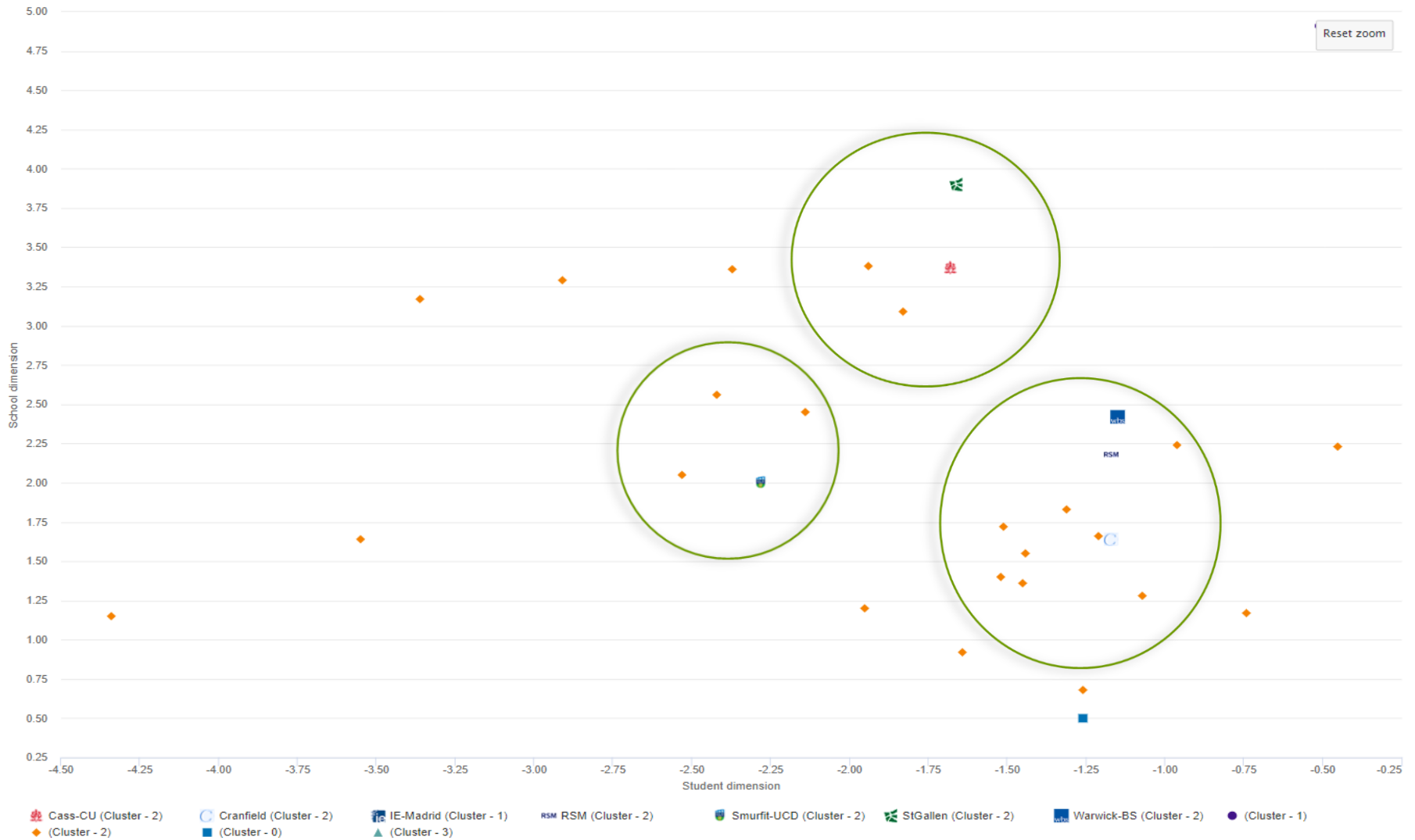


Legend: Cass-CU (Cluster - 2), Cranfield (Cluster - 2), IE-Madrid (Cluster - 1), RSM RSM (Cluster - 2), Smurfit-UCD (Cluster - 2), SIGallen (Cluster - 2), Warwick-BS (Cluster - 2), (Cluster - 1), (Cluster - 2), (Cluster - 0), (Cluster - 3)

RSM / Dialogic

Example FT MIM & FT global FT MBA: All variables, 2019, University based schools, cluster 2 (student negative, school level positive)

Clusteranalysis based on FT Global MBA and Masters in Management rankings (Benchmarked with Current rank from ranking FT - Masters in Management in year 2019)





3

SDG impact analysis

SDG merged to FT ranking

Aim and approach of the pilot

Aim

How can we build an Artificial Intelligence based methodology to include SDG impact In the FT ranking methodology?

Approach

Use a big data approach, by piloting with all the research output of business schools in a selective set (FT 50 journal articles) and an extended set (900+ journals, all articles 2010-2018)

Steps

3 steps process: Building the model, applying the model, incorporating the model



Step 1: Building the model

Building the model

1. We collected over 5.5 million meta data records on publications from Web-of-Science (WOS) and Nature Scigraph (<https://scigraph.springernature.com>)
2. Use keywords (determined by experts) to retrieve relevant SDG papers (article abstracts)
3. Use the abstracts of these papers to train a Neural Network model to classify publication on SDG impact. (We applied a Recurrent Neural Network Method)

(see appendix with method section for an example search query and Neural Network Method details)

Ranking Business schools based on SDG impact only

We rank the Business schools on their relative share of SDG related publications:

$$\# \text{ SDG related publications per school} / \# \text{ Total publications per school}$$

This way we do not have a bias toward big schools and small schools (with less publications)

Set 1: FT 50 list of articles

Set 2: Extended list of articles (WOS)

Set 1: FT 50: Relative share of SDG pubs in FT 50 output

Business School	Total publication	SDG publications	SDG-Ratio
Toulouse Business School	12	6	50%
Solvay Brussels School of Economics and Management	15	5	33%
Louvain School of Management	8	2	25%
Montpellier Business School	133	26	20%
Burgundy School of Business	16	3	19%
University of St Gallen	68	12	18%
University of Ljubljana, School of Economics and Business	30	5	17%
Esade Business School	13	2	15%
Rotterdam School of Management, Erasmus University	20	3	15%
Cranfield School of Management	34	5	15%

Set 2: Extending the dataset to more journals

- The FT-50 list contains only a limited set of publications and only a small set is related to SDGs
- Schools publish in much wider set of journals
- Therefore, we extend the FT-50 list with 941 journals
- In total we have 991 journals based on the publication database of the Erasmus University
- We base the ranking on 1 million publications from 2010-2018

Extended dataset: Relative share of SDG related pubs in total pubs

Business School	Total publication	SDG publications	Ratio
Solvay Brussels School of Economics and Management	106	23	22%
Montpellier Business School	333	65	20%
Burgundy School of Business	63	11	17%
Eada Business School Barcelona	62	10	16%
Antwerp Management School	76	12	16%
WU (Vienna University of Economics and Business)	832	127	15%
Maastricht University School of Business and Economics	33	5	15%
Audencia Business School	74	11	15%
EM Lyon Business School	322	47	15%
Nyenrode Business Universiteit	96	14	15%
University of Strathclyde Business School	42	6	14%
Nottingham Business School at NTU	21	3	14%
Católica Lisbon School of Business and Economics	52	7	13%
EM Normandie	15	2	13%
Ashridge Executive Education at Hult	15	2	13%
Kedge Business School	468	62	13%
Kozminski University	103	13	13%
HHL Leipzig Graduate School of Management	64	8	13%
Toulouse Business School	205	25	12%
Henley Business School	33	4	12%
University of St Gallen	944	113	12%
University of Antwerp	2529	301	12%
La Rochelle Business School	27	3	11%
IMD Business School	339	37	11%
Louvain School of Management	28	3	11%



Step 3: Incorporating the model in the FT ranking

Incorporating SDG impact as ranking variable

- We take the 28 european schools that are ranked in the global MBA 2019 ranking
- We reranked the schools from 1 to 28.

- For example:

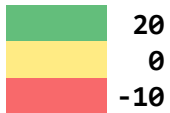
Corrected rank	Rank in 2019	School name
1	3	Insead
2	6	London Business School
3	12	Iese Business School
4	13	University of Oxford: Saïd
5	16	University of Cambridge: Judge

Incorporating SDG impact as variable (continued)

- Next, we replace the ‘Weighted salary’ variable (weight in ranking = 20%) with the relative SDG publication score.
- We reconstruct the ranking by use Z-scores
- If we change the focus from *salary* to *SDG impact* we see a shift in the final ranking position

Incorporating SDG impact for EURO schools

Difference	Corrected MBA Rank	MBA Rank incl SDG	School name
0	1	1	Insead
1	3	2	Iese Business School
-1	2	3	London Business School
20	24	4	Università Bocconi
2	7	5	IMD Business School
0	6	6	Esade Business School
16	23	7	HEC Paris
9	17	8	EM Lyon Business School
0	9	9	Rotterdam School of Management, Erasmus University
-6	4	10	University of Oxford: Saïd
14	25	11	IE Business School
14	26	12	Imperial College Business School
-1	12	13	University of St Gallen
-6	8	14	Warwick Business School
-10	5	15	University of Cambridge: Judge
11	27	16	Durham University Business School
-6	11	17	City, University of London: Cass
-2	16	18	ESMT Berlin
-6	13	19	WHU - Otto Beisheim School of Management
2	22	20	Grenoble Ecole de Management
-11	10	21	Alliance Manchester Business School
-1	21	22	Essec Business School
-3	20	23	Lancaster University Management School
-10	14	24	Cranfield School of Management
-10	15	25	Mannheim Business School
2	28	26	University of Edinburgh Business School
-9	18	27	The Lisbon MBA
-9	19	28	University College Dublin: Smurfit



Exercise 2: Group Work: Questions

- 1. Peers and Competitors:** How would you define and select peers and competitors? Are you aware of national / international peers and competitors for your institution?
- 2. Trend analysis:** Where would you seek access to get internal/external benchmarking data from? Which unit within your institution would organise strategic benchmarking activities?
- 3. Institutional Cultural Web:** What would you change in your institution to allow strategic benchmarking (power, resources and mandate?)



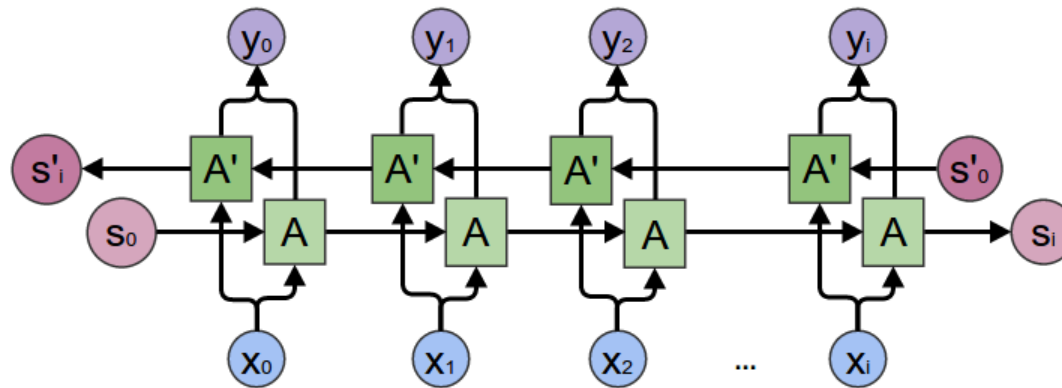
Thank you!

Appendix: method details

Search example: SDG 8: Decent work and economic growth

```
WHERE publication.abstract @@ to_tsquery('( ( economic <3> growth ) | ( gross<-> domestic<-> product <->growth ) | ( GDP<-> growth ) | ( economic<-> productivity ) | ( ( economy & ( productivi y ) & ( diversification | innovation ) ) ) | ( ( product<-> activity ) ) | ( ( labor <-> productivity ) ) | ( ( decent<-> job ) ) ) | ( ( ( decent<-> work ) ) | ( ( job<-> creation ) ) | ( ( full<-> employment ) ) | ( ( entrepreneurship ) ) | ( ( global<-> resource<-> efficiency ) ) | ( ( labour<-> right ) ) | ( ( labor<-> right ) ) ) | ( ( ( safe<-> working<-> environment ) ) | ( ( secure <->working<-> environment ) ) | ( ( sustainable <-> tourism ) ) | ( ( domestic<-> material<-> consumption ) ) | ( ( equal<-> pay<-> for<-> work ) ) | ( ( youth<-> employment ) ) | ( ( child<-> labor ) ) ) | ( ( ( human <->traffic ) ) | ( ( micro<-> finance ) ) | ( ( microfinance ) ) | ( ( employ <3> ( safe | secure ) ) ) | ( ( youth | young<-> people ) <3> ( employment | unemployment ) ) | ( ( social<-> policy ) ) | ( ( access <3> ( financial<->service ) ) ) ) | ( ( ( access <3> ( banking ) ) ) | ( ( access <3> ( insurance ) ) ) | ( ( forced<-> labor ) ) | ( ( labor <-> force ) ) | ( ( slavery ) ) | ( ( trade <->support ) ) | ( ( (Global<-> Jobs<->Pact) ) ) ) ');
```

The neural network model



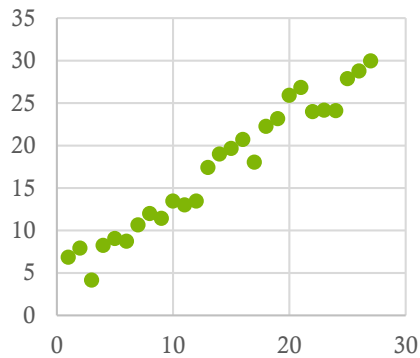
Type: Bidirectional LSTM (BiLSTM)

Intuition: The text is seen as a sequence of words. The model 'reads' (i.e. predicts) the next word from *left* \rightarrow *right* and *right* \rightarrow *left* in order to gain a understanding of how the texts are constructed.

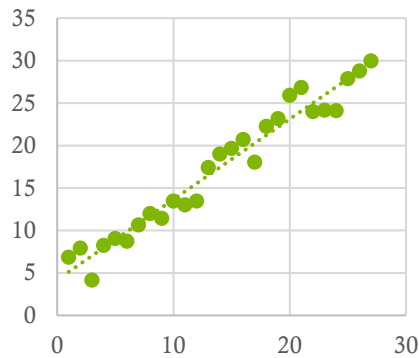
Training the model: 70 / 30 approach

Neural networks can be **too powerful** and **overfit** to the data

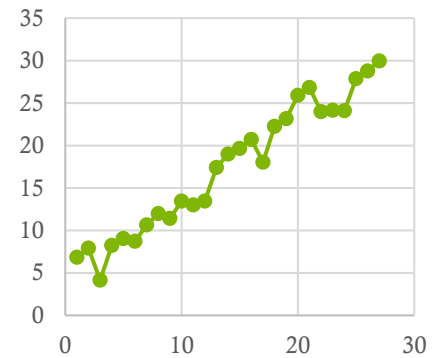
The data



Best fit



Overfitting



Master in Management (MIM) ranking of FT and QS: variables and data sources

				Data sources		
				Self reported	Stakeholder Reported	Systems/web based
Ranking	Variable	Unit	Weight (%)			
FT-MIM	Aims achieved	%	5		Alumni Survey	
FT-MIM	Career (progress) rank	Rank	5		Alumni Survey	
FT-MIM	Careers service rank	Rank	5		Alumni Survey	
FT-MIM	Company internships	%	0			
FT-MIM	Course length (months)	Quantity	0	School		
FT-MIM	Employed at three months	%	5	School		
FT-MIM	Faculty with doctorates	%	6	School		
FT-MIM	International board	%	1	School		
FT-MIM	International course experience	Rank	8		Alumni Survey	
FT-MIM	International faculty	%	5	School		
FT-MIM	International mobility rank	Rank	8		Alumni Survey	
FT-MIM	International students	%	5	School		
FT-MIM	Number enrolled students	Quantity	0	School		
FT-MIM	Number of languages on offer	Quantity	1	School		
FT-MIM	Salary increase	%	10		Alumni Survey	
FT-MIM	Salary today (US\$)	Quantity	0		Alumni Survey	
FT-MIM	Value for money rank	Rank	5		Alumni Survey	
FT-MIM	Weighted salary (US\$)	Quantity	20		Alumni Survey	
FT-MIM	Women in board	%	1	School		
FT-MIM	Women faculty	%	5	School		
FT-MIM	Women students	%	5	School		
QSMIM	Employer Reputation (Employability)	Score	30		Employer Survey	
QSMIM	Employment Rate (Employability)	Score	5	School	Employer Survey	
QSMIM	Alumni Outcomes Index (Alumni Outcomes)	Score	15			150 lists
QSMIM	10Y ROI (Value for Money)	Score	15	School		number of data points
QSMIM	Payback Month (Value for Money)	Score	5	School		
QSMIM	Academic Reputation (Thought Leadership)	Score	15		Scholars Survey	
QSMIM	Research Impact (Thought Leadership)	Score	2,5			SCOPUS
QSMIM	PhD Faculty (Thought Leadership)	Score	2,5	School		
QSMIM	Gender Balance – Students (Class & Faculty Diversity)	Score	2,5	School		
QSMIM	Gender Balance – Faculty (Class & Faculty Diversity)	Score	2,5	School		
QSMIM	International Mix – Students (Class & Faculty Diversity)	Score	2,5	School		
QSMIM	International Mix – Faculty (Class & Faculty Diversity)	Score	2,5	School		