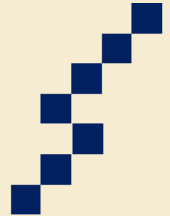




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HELENA



Higher Education Global
Efficiency Analysis

International Data Envelopment Analysis in Higher Education: How Do Institutional Factors Influence University Efficiency?

Sait Başkaya, HELENA Project, PIM, University of Duisburg-Essen

11th International DEA Conference, Samsun, Turkey, 28.06.2013

- 1. Introduction**
- 2. Data and Methods**
- 3. Results**
- 4. Conclusions and Critical View**
- 5. Outlook**

1. Introduction (I)

“big” HEI

- all kinds of study programs
- buildings and campus
- large administration
- a lot of students
- „mass production“
- synergy -> efficiency?

“small” HEI

- one specific study program
- small area
- administration necessary
- few students
- „high production“
- specialisation -> efficiency?

Difference between “Universität” and “Fachhochschule”

- “Universität” = university
- “Fachhochschule” = college
 - more practical teaching
 - hardly any research
 - no promotion opportunity
 - but current changes
 - no lectureship, master of education (qualification and authorization to teach at a school)
 - no study of language, medicine, law

2. Data and Methods (I)

Institutional Factors:

- public vs. private
- “Universität” vs. “Fachhochschule”
- University vs. University of Technology vs. Business Schools

3 categories:

- “Universität”
- “Fachhochschule”
- “Technische Universität” (University of Technology)

2. Data and Methods (II)

data of 33 HEIs from Germany

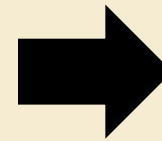
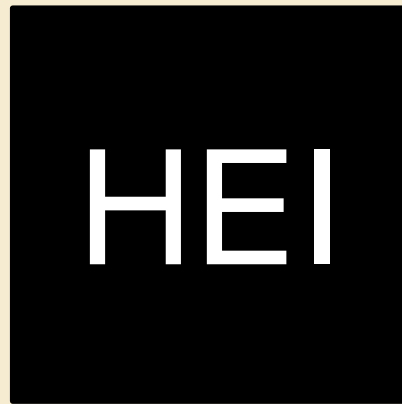
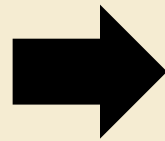
	General	Technology	Σ
“Universität”	19	4	23
“Fachhochschule”	10	0	10
Σ	29	4	33

2. Data and Methods (III)

Inputs

Outputs

budget
staff



graduates
third party funds

3. Results (I)

HUC = HELENA UNIVERSITY CODE


Example: MUNI_TU

MUNI



first 4 letters of city (Munich)

TU



TU, HS or name

$26 * 26 = 676$ possibilities

3. Results (II)

	HUC	CCR	BCC
1	AACH_TU	57,24%	100,00%
2	FREI_UN	100,00%	100,00%
3	HEID_UN	76,33%	100,00%
4	KASS_UN	66,14%	100,00%
5	MAIN_JG	100,00%	100,00%
6	MUNI_LM	42,05%	100,00%
7	MUNI_TU	100,00%	100,00%
8	MUNS_WW	47,49%	100,00%
9	NURE_UN	99,09%	100,00%
10	BERL_TW	100,00%	100,00%
11	DUSS_FH	100,00%	100,00%
12	FULD_HS	100,00%	100,00%
13	SCHM_FH	64,45%	100,00%
14	TRIE_HS	76,83%	90,13%
15	LEIP_UN	51,89%	84,91%
16	BIEL_UN	59,32%	82,52%
17	KIEL_UN	67,49%	74,28%

18	ERFU_FH	39,55%	68,80%
19	BERL_TU	62,73%	68,11%
20	FRAM_UN	45,91%	66,38%
21	COLO_FH	52,86%	61,48%
22	AUGS_HS	41,06%	60,80%
23	STUT_UN	55,17%	59,97%
24	HAMB_UN	44,05%	59,93%
25	REGE_UN	46,51%	49,74%
26	DORT_TU	34,20%	48,81%
27	HANN_GW	38,25%	48,65%
28	GOTT_UN	36,68%	45,53%
29	AACH_HS	35,74%	40,19%
30	DUSS_UN	35,06%	38,69%
31	MITH_TH	33,76%	37,73%
32	BONN_UN	16,18%	26,07%
33	HOHE_UN	16,34%	17,60%

3. Results (III)

Mean

Category	CCR	BCC
<i>“Universität”</i>	56,44 %	72,66 %
<i>“Fachhochschule”</i>	64,43 %	75,91 %

Median

Category	CCR	BCC
<i>“Universität”</i>	51,89 %	74,28 %
<i>“Fachhochschule”</i>	58,66 %	79,47 %

3. Results (IV)

Mean

Category	CCR	BCC
<i>General HEI</i>	58,21 %	72,88 %
<i>HEI of Technology</i>	63,54 %	79,23 %

Median

Category	CCR	BCC
<i>General HEI</i>	51,89 %	74,28 %
<i>HEI of Technology</i>	59,99 %	84,06 %

3. Results (V)

Mean

Category	CCR	BCC
<i>“Universität”</i>	54,94 %	71,28 %
<i>“Fachhochschule”</i>	64,43 %	75,91 %
<i>HEI of Technology</i>	63,54 %	79,23 %

Median

Category	CCR	BCC
<i>“Universität”</i>	47,49 %	74,28 %
<i>“Fachhochschule”</i>	58,66 %	79,47 %
<i>HEI of Technology</i>	59,99 %	84,06 %

4. Conclusions

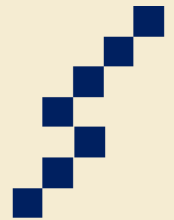
- 1: “Fachhochschule” are more efficient than “Universität”
- 2: Technology HEIs are more efficient than General HEIs
- 3: Technology HEIs >> “Fachhochschule” >> “Universität”

- higher number of data: other inputs and output
 - publication
 - PhDs
- wider range of data: worldwide data of HEI
- „Fachhochschule“ of Technology
- private vs. public
- efficiency over time, any trends

**Thank you for your
patience and interest!**
Teşekkür ederim!



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Förderkennzeichen 01PW11007

Backup

	UniversityName	CountFullTime Students	Budget	Staff	Drittmittel Gesamt	Graduates
1	Ludwig-Maximilians-Universität München	41776	1173500000	13955	154655600	6895
2	University of Hamburg	36108	226646000	8671	53314900	4500
3	Johannes Gutenberg University Mainz	34268	80427400	3548	48409300	3723
4	University of Münster	36056	327400000	9566	56639300	7349
5	Frankfurt University	32961	310885429	6801	58282100	4591
6	Aachen University	31468	382478700	11017	102606100	3314
7	Technische Universität Berlin	27497	248665000	4230	57096700	2525
8	University of Leipzig	26299	205021800	6199	41195900	4976
9	University of Erlangen-Nürnberg	25036	112331901	8505	76738300	4362
10	University of Bonn	26401	438631000	7021	2476300	3483
11	Heidelberg University	25880	171477283	11606	87319600	3271
12	Technische Universität München	23186	503100000	1868	103862100	4199
13	University of Kiel	22128	144219300	2544	36162000	2636
14	Georg August Göttingen University	23129	357500000	7511	52561200	4003
15	Technischen Universität Dortmund	21682	217048000	2711	14442300	2988
16	University of Freiburg	19794	90000000	10090	71115300	3389
17	Leibniz Universität Hannover	19943	342900000	3378	37609700	3143
18	University of Stuttgart	18648	398797000	4462	66936800	2273
19	University of Kassel	17868	125240000	2205	16763800	3857
20	University of Bielefeld	17673	142284000	2143	26059700	3170
21	University of Regensburg	16633	150200000	5226	31869400	3263
22	University of Düsseldorf	16055	281444709	6377	40968500	3226
23	University of Hohenheim	12140	124847000	4904	3085900	1096
24	Fachhochschule Düsseldorf	7633	24200000	472	2500000	1319
25	Fachhochschule Aachen	9024	66049761	3628	9028188	1178
26	Fachhochschule Köln	16191	116450920	1401	11990306	2439
27	Fachhochschule Erfurt	3615	27452633	393	3708137	378
28	Fachhochschule Schmalkalden	2663	12811800	218	1010400	414
29	Fachhochschule Trier	6266	40132000	403	6181533	1058
30	Fachhochschule Augsburg	5406	24468100	639	2230000	528
31	Hochschule Fulda	6552	28323200	389	9560089	978
32	Technische Hochschule Mittelhessen	13198	55800000	866	4300000	803
33	Hochschule für Technik und Wirtschaft Berlin	11756	54700000	530	7700000	2147