

Mapping key actors in Higher Education Research and Science Studies HERSS Dashboard

Aliakbar Akbaritabar (Ali)
Akbaritabar@DZHW.eu

8/22/2019



German Centre for Higher Education Research
and Science Studies ■

Why?

- ① To explore and present the world of *Higher Education Research and Science Studies* (HERSS)
- ② To provide an overview to the key actors in the field
- ③ To focus on **German** research centers and organizations
- ④ To cover their local and international collaborations
- ⑤ To find **unrealized** potential for collaboration
- ⑥ To do *contextualized scientometrics* (Waltman & Van Eck, 2016)
 - **Contextual** information on publications analyzed
 - **Simplicity** of indicators
 - **Diverse** set of indicators

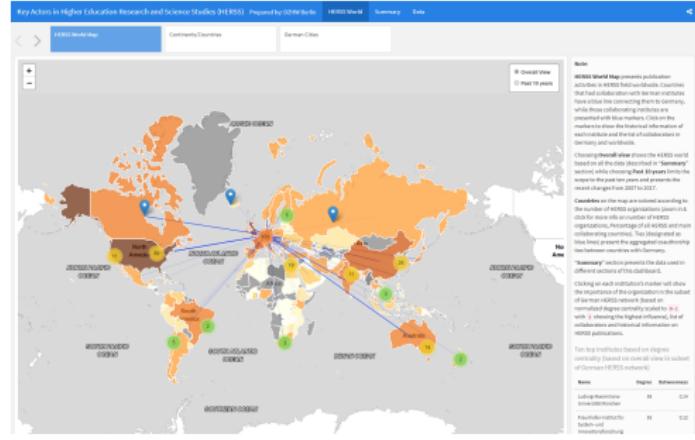
How?

By

- ① Querying all publications in **23** HERSS journals (list from BMBF ministry of Germany)
- ② Extracting **29,898** pubs ranging from 1971 to 2017 from WoS
- ③ Organization *name disambiguation* using *Jaro-Winkler distance*, address *geocoding* using Google map API
- ④ *Network analysis* of collaborations
- ⑤ Looking at different levels: Continents, cities, country of affiliation, HE institutes
- ⑥ Identifying 6,260 organizations (264 in Germany)
- ⑦ Including 128 countries and 202 cities (99 in Germany)

What? (1/3)

- ① An interactive dashboard
- ② Explore the results
- ③ Ask questions
- ④ Find answers

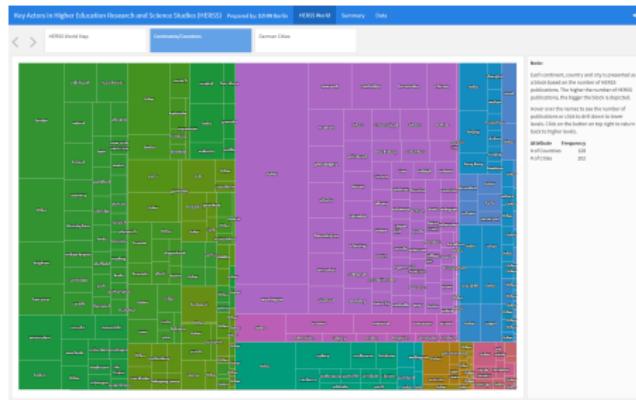


HERSS World Map section

- Number of HERSS Organizations in a country
- Percentage of all HERSS orgs
- Number of HERSS pubs
- First and last HERSS pub year
- Country's collaborators worldwide
- Importance of each institution in the collaboration network
- Choosing **Past 10 years** will adopt the view to 2007 - 2017

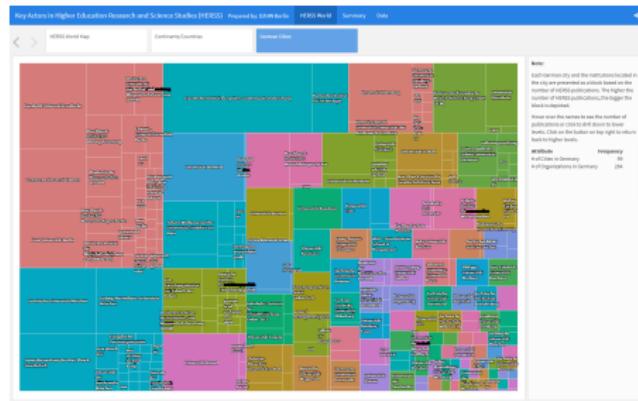
What? (2/3)

- Continents/Countries
 - Distribution of HERSS orgs in each continent, country and city
 - Continents and countries are sized based on number of HERSS publications
 - Europe is the current leading continent, before 2000 the North America was the leader



What? (3/3)

- German Cities
 - Distribution of HERSS orgs in German cities
 - German cities and universities are sized based on number of HERSS publications
 - Berlin, long-term lead, while the 2nd, 3rd, 4th positions changing between Munich, Karlsruhe and Bielefeld



Data Tables section

- **Journals:**
 - Number of publications in each of 23 HERSS journals
 - Earliest and latest HERSS publication
- **Organizations:**
 - All HERSS organizations
 - Earliest and latest HERSS publication
 - Total number of HERSS publications
 - Main organizations active in the past 10 years

The screenshot shows two data tables from the HERSS Dashboard.

Top Table (Journals):

Journal Name	Frage
1 Schtemmety	
2 Research Policy	
3 Higher Education	
4 Teaching and Teacher Education	
5 Studies in Higher Education	
6 Comparative Education Review	
7 Social Studies of Science	
8 Research in Higher Education	
9 Science Technology & Human Values	
10 Comparative Education	

Bottom Table (Organizations):

Organizations	Number	Order	OrderPage	Index	OrderPage	Index
A Akbaritabar	1	1	1	1	1	1
B Akbaritabar	2	2	2	2	2	2
C Akbaritabar	3	3	3	3	3	3
D Akbaritabar	4	4	4	4	4	4
E Akbaritabar	5	5	5	5	5	5
F Akbaritabar	6	6	6	6	6	6
G Akbaritabar	7	7	7	7	7	7
H Akbaritabar	8	8	8	8	8	8
I Akbaritabar	9	9	9	9	9	9
J Akbaritabar	10	10	10	10	10	10
K Akbaritabar	11	11	11	11	11	11
L Akbaritabar	12	12	12	12	12	12
M Akbaritabar	13	13	13	13	13	13
N Akbaritabar	14	14	14	14	14	14
O Akbaritabar	15	15	15	15	15	15
P Akbaritabar	16	16	16	16	16	16
Q Akbaritabar	17	17	17	17	17	17
R Akbaritabar	18	18	18	18	18	18
S Akbaritabar	19	19	19	19	19	19
T Akbaritabar	20	20	20	20	20	20
U Akbaritabar	21	21	21	21	21	21
V Akbaritabar	22	22	22	22	22	22
W Akbaritabar	23	23	23	23	23	23

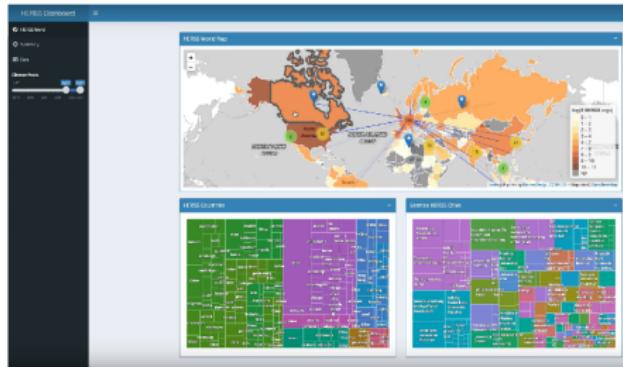
Where?

① Static

- Flexdashboard developed in R
- <https://bit.ly/2HNf5lH>

② Dynamic

- Shiny Dashboard developed in R
- <https://bit.ly/2Kg3b5C>



Limitations

- **Disambiguation** of research institutes' name
- **Geocoding** addresses of research institutes
- **No ranking implied.** We are only presenting the current picture, a comprehensive and reliable ranking needs much more work
- Still a *work in progress* in need of further improvements

The story behind HERSS Dashboard

- **It is told here:**

<https://www.echer.org/key-actors-in-higher-education-research-and-science-studies-herss/>

HERSS at a glance

Why?

DZHW
Deutsches Zentrum für
Hochschulforschung und
Wissenschaftspolitik

- 1. To explore and present the world of Higher Education Research and Science Studies (HERSS)
- 2. To give access to the key actors in the field
- 3. To focus on German research centers and organizations
- 4. To cover their local and international collaborations
- 5. To find unrealized potential for collaborations
- 6. Data visualization (see also: [Akbaritabar et al., 2014](#))
 - Contextual information on publications analyzed
 - Simplicity of indicators
 - Diverse set of indicators



Keywords: Science Studies, Higher Education Research, WOS, Germany, DZHW

Where?

We had multiple goals to address and a target audience of experts who are active in HERSS field.

Best way to observe the results is to scan these QR codes or visit the links.




How?

By

1. Querying all publications in 23 HERSS journals (list from [SHBR ministry of Germany](#))
2. Extracting 29,898 pubs ranging from 1972 to 2017 from WoS
3. Organizing some disgregation using longitude, distance, address, geo coding using Google-map API
4. Network analysis of publications
5. Looking at movement levels, countries, cities, country of affiliation, HE Institutes
6. Identifying 6,640 organizations (264 in Germany)
7. Including 128 countries and 202 cities (99 in Germany)

Dashboard sections:

1. HERSS World Map:
 - Number of HERSS Organizations in a country
 - Percentage of all HERSS orgs
 - Number of HERSS pubs
 - First and last HERSS pub year
 - Countries and continents worldwide
 - Importance of each institution in the collaboration network
 - Choosing Past 10 years will adopt the view to 2007 - 2017
2. Continents/Countries:
 - Distribution of HERSS organizations in ex-continent, country and city
 - Stats based on the count of HERSS publications
3. German Cities:
 - Number of HERSS organizations in Germany cities
 - Stats based on the count of HERSS publications
4. Data:
 - Journals:
 - Number of publications in each of 23 HERSS journals
 - Earliest and latest HERSS publication
 - Countries:
 - All HERSS organizations
 - Earliest and latest HERSS publication
 - Total number of HERSS publications
 - Mainly organizations active in the past 50 years

HIGHER EDUCATION RESEARCH and SCIENCE STUDIES (HERSS) DASHBOARD

Developed by: Aliakbar Akbaritabar (Aliakbaritabar@DZHW.eu), DZHW, Department 2, Berlin

What?

DZHW
Deutsches Zentrum für
Hochschulforschung und
Wissenschaftspolitik

- 1. An interactive dashboard
- 2. Explore the results
- 3. Ask questions
- 4. Find answers

Continents/Countries



Continents and countries are sorted based on number of HERSS publications.

German Cities



German cities and universities are sorted based on number of HERSS publications.

In the interactive version online you can click and drill up/down to different levels and see number of publications. Look at "Where?" section!

And?

Limitations:

- Disaggregation of research institutes' name
- Geocoding addresses of research institutes

No ranking implied. We are very grateful for the current picture, comprehensive and reliable ranking needs much more work.

Still a work in progress in need of further improvements.

Aliakbar Akbaritabar (Ali) Aliakbaritabar@DZHW.eu | HERSS Dashboard

12

Thank you!